

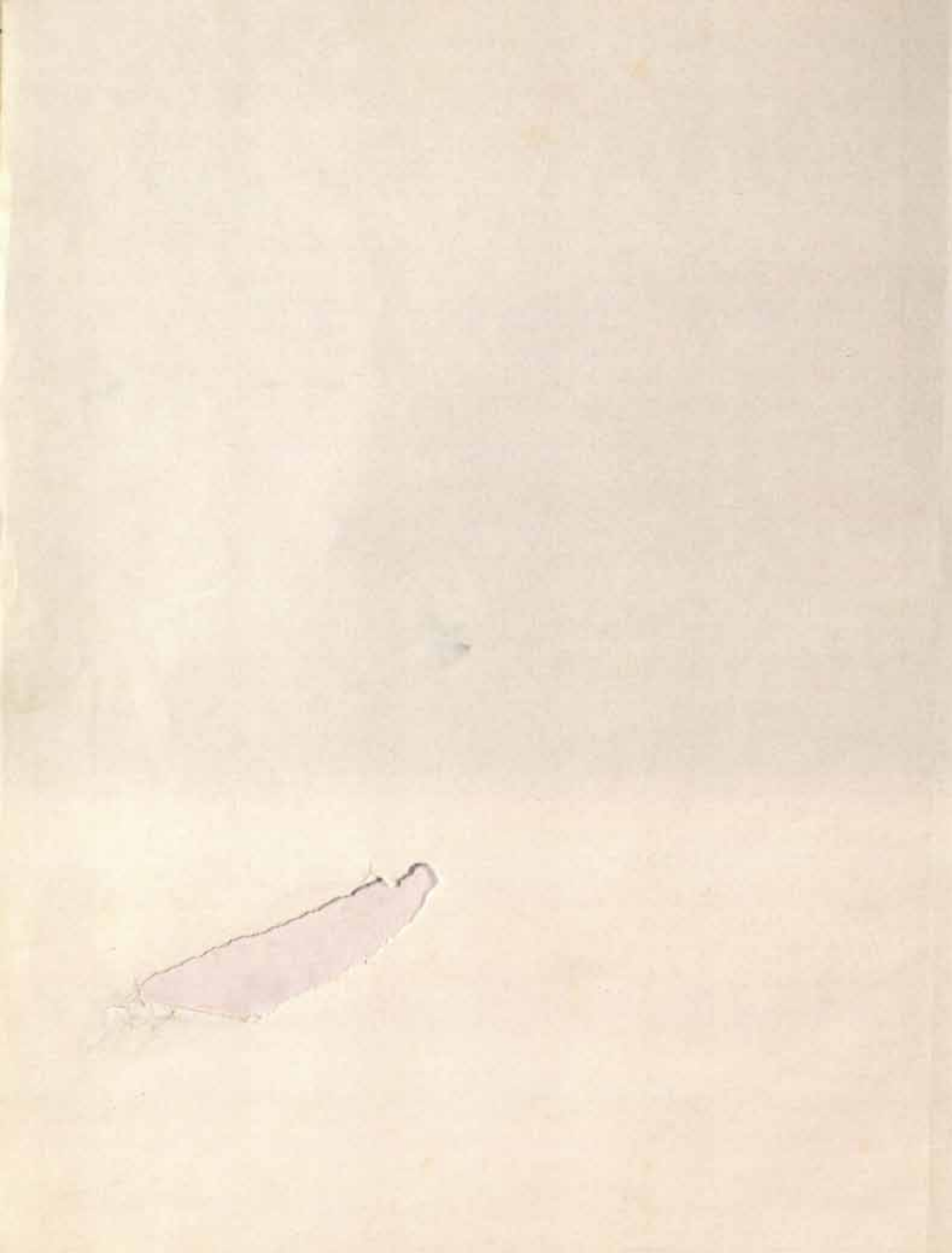
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VOLUME TWO
A GAZETTEER OF EXPLORED AND
EXCAVATED SITES IN INDIA



Prepared under the auspices of the Indian Council of Historical Research

R-913.05403
E.I.A./GRD



**Munshiram Manoharlal
Publishers Pvt. Ltd.**

37751 दिनांक 17/4/90
R. 913.05403 / E.I.A / Gho
नई दिल्ली

ISBN 81-215-0087-7 (For the Set)

ISBN 81-215-0089-3 (Vol. II)

First published 1989

©1989, Indian Council of Historical Research, New Delhi

Published by Munshiram Manoharlal Publishers Pvt. Ltd., Post Box 5715, 54 Rani Jhansi Road, New Delhi 110055,
phototypeset and printed at Raj Bandhu Industrial Co., C-61, Mayapuri, Phase II, New Delhi 110064

for 2 vols ref
for 1913/1910
for 1913/1910

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natural rock-shelters [14.1.1], a large number of which exist in the Vindhyan hills in c. India clothed with fairly thick forest vegetation readily providing suitable habitat for wild animals. The shelters formed by the natural process of differential weathering of the sedimentary rocks are valuable for the investigations of Stone Age cultures as quite a few of them contain prehistoric habitation deposits. The location of the Adamgarh hill, about 2 km s. of the Narmada river at Hoshangabad, is very suitable for tracing the cultural sequence and stratigraphy in the undisturbed deposits in rock-shelters and for attempting a correlation of the material exposed in the cliff sections on the NARMADA between Hoshangabad and Narsinghpur which region has long been known for its rich prehistoric potentialities.

Although the rock paintings [13] of Adamgarh were first noticed in 1922 (Ghosh, 1932; Gordon, 1958) Stone Age artefacts were discovered here only in 1935 by de Terra and Teilhard de Chardin (de Terra & Paterson, 1939, p. 322). Following the discovery of Lower Palaeolithic [4.2] as well as Mesolithic [4.5] implements on the hill the site was explored from time to time by several scholars and a large number of Palaeolithic tools were obtained from the surface or from the pockets exposed in the stone quarries on the hill. With a view to investigating the Palaeolithic and Microlithic potential of the site and to tracing evidence for dating the rock paintings the author conducted a systematic excavation in 1961 on this hill both in the rock shelters as well as on the open ground in front of them on behalf of the ASI.

The Palaeolithic stratigraphy revealed in the excavated trenches shows a laterite deposit resting on the quartzite rock which in succession is overlain by partly hardened sandy gravelly deposit and a sticky red clay, the last two derived from the underlying laterite. Above them and partly enclosed within these deposits is the fragmentary talus or debris containing Palaeolithic implements. The surface soil resting on the implementiferous bed is composed of red silty clay with a few dark humus patches here and there. Wherever the tool-bearing talus is absent the red sandy clay is extremely eroded and on the resultant uneven surface the microlith-bearing dark soils rest with a clear erosional unconformity. None of the deposits is laid down by water and the surface dark clays seem to have been

deposited by wind.

Nearly all the Lower Palaeolithic implements are made on quartzite and fine-grained sandstone that are locally available in the Vindhyan rocks on the hill or as river pebbles. Most of the tools are on flakes obtained from rock blocks or pebbles and consist of handaxes, cleavers, choppers, scrapers, points and flakes, discoids and cores. The standardized forms like handaxes and cleavers constitute about 20% of the total tool collection. Techno-typologically the industry belongs to the typical Acheulian culture but in the absence of clear stratigraphic evidence no further divisions within the Acheulian are possible.

In some trenches the debris containing Lower Palaeolithic tools is overlain by layers of rock fragments containing tools of smaller dimensions. Thus chronologically the industry belongs to the early post-Acheulian stage. The tools are generally made on quartzite and rarely on chert, chalcedony or vein quartz. It is an assemblage of scrapers, points and flake-blades typologically comparable with other Indian Middle Palaeolithic [4.3] artefacts.

The topmost deposit on the hill is the black clay. It is a massive deposit without any partings or layers produced by water action. In mineral contents and chemical composition it is the same Black Cotton Soil [9.1] occurring on the Narmada terrace surrounding the hill. This clay is the horizon of Mesolithic (Microlithic) industries and yields quantities of microliths and waste material. In one trench the finished tools were about 5000 and the waste material weighed approximately 250 kg. The tools are made on siliceous minerals like chert, chalcedony, jasper, agate, etc., pebbles and chunks of which must have been obtained from the adjoining river bed as no geological formation on the hill contains these minerals. In the tools the most predominant are points and blades (point-and-blade industry) and also include borers, awls, scrapers, burins, triangles, trapezes and cores. A detailed analysis of tools obtained from successive levels from a deposit nearly 1 to 3 m thick clearly indicates that the earlier microliths belong to the Mesolithic stage and the later ones show Neolithic-Chalcolithic [4.6.14] affinities. This is also borne out by associated objects like pottery, animal bones and stone objects like mace-heads. A thin deposit occurring at the top at places yields iron objects and beads; a coin of the historical period has also been found.

The animal bones [15.1] found associated with the Mesolithic cultures include both domesticated animals (dog, zebu or one-humped cattle, buffalo, goat, sheep and pig) and wild animals (lizard, porcupine, horse or donkey, *barasinga*, *sambhar*, *chital* and Indian hare), almost in equal proportions. Thus the Mesolithic industry reveals a hunting-based economy and a

nomadic (camp) life. There is no evidence of agriculture or pastoralism. The presence of domestic animals may at the most suggest some sort of Neolithic tradition hitherto unrecognized. In a way it is comparable with that of the Natufians of Mount Carmel who lived as a primitive group in the *milieu* of a Neolithic environment. Some fragments of human bones have been found in the Mesolithic level but the Palaeolithic deposit has not yielded any animal or human bones. It may be mentioned that a large number of thoroughly mineralized animal bones occur in the sediments forming the Narmada cliffs. On the basis of typological comparisons of the tools of the Lower and Middle Palaeolithic cultures obtained in the excavation with those associated with the animal fossils in the Narmada alluvia the lithic cultures appear to be the late Middle Pleistocene to the Late Pleistocene [9.8.2], approximately falling within the time range 200000 to 20000 years B.P. The ^{14}C date of shells associated with the earlier microliths is 7450 ± 130 B.P. and that of the uncharred bones from the upper level is 2845 ± 105 B.P.

Most of the rock-shelters at Adamgarh as well as those situated on the BHIMBETKA hills on the n. bank of the Narmada lying not far from Hoshangabad, as also those from PACHMARHI, Mirzapur, etc., in the Vindhyan region, possess rock paintings made in red, dark brown and white colours. Although no direct evidence of the antiquity of these paintings has been found in the excavation a systematic study of the paintings—style, depicted objects, superpositions, etc.—has been recently carried out by Wakankar (Wakankar and Brooks, 1976). According to him only a few paintings belong to the Mesolithic phase while the rest are of Chalcolithic [4.14], early historical [4.18] and medieval periods.

The Adamgarh hill thus seems to have been a much frequented site from the Palaeolithic through the Mesolithic down to the early historical and medieval periods. During prehistoric times its convenient situation in the vicinity of a perennial stream met the basic needs of water. The thick forested hills on both banks of the river provided animal and vegetable food. Natural rock-shelters on the hills could have served as emergency shelters during rains and also as a defence against wild beasts. The rock fragments in the talus on the escarpment side and pebbles from the adjoining river were within easy reach for the manufacture of implements for hunting and digging up edible roots. In the later periods when man acquired the knowledge of cultivation the fertile black soil of the adjacent Narmada plains would have been useful to him. Although no palaeoclimatic deductions can be made from the available evidence it seems broadly that the climate was more humid during the Palaeolithic times but gradually became dry towards the Mesolithic.

de Terra, H., & Paterson, T.T., 1939, *Studies on the Ice Age in India & associated Human Remains*, Washington. Ghosh, M., 1932, *Rock Paintings & other Antiquities of Prehistoric & Later Times*, Mem. ASI, 24. Gordon, D.H., 1958, *Prehistoric Background of Indian Culture*, Bombay (for rock paintings). Joshi, R.V., 1978, *Stone Age Cultures of c. India*, Poona. Wakankar, V.S., & Brooks, R.R.R., 1976, *Stone Age Paintings in India*, Bombay.—R.V. JOSHI

Adichanallur, Adichchanallur, Adittanallur (80°50'; 76°40'), Dt Tirunelveli, an urn-burial site of the s. Indian Megalithic complex [4.17.10], haphazardly excavated in 1876 by Jager (mentioned in Rea, 1915) and more extensively by Rea between 1889 and 1905, with a short spell of exploration by Louis Lapique in 1903-4. The urn-burials of the site are a part of the typical pure urn-fields that are found in a large part of the s. most Tamil Nadu Dts—Madurai, Ramnad and Tirunelveli—with a spillover all around, including the neighbouring coastal parts of Kerala. They are singularly free of any lithic appendage, except that at Adichanallur itself there are low heaps of quartzitic chips which are largely found in the bed rock in this locality. Those chips are believed to mark the tops of the pits where the urn-burials were interred. It is not clear from surface explorations in the areas outside this primary urn-burial zone, especially in Pudukkottai and Coimbatore, whether urn-burials of these areas, which are a significant part of the interment in the spectacularly quarried and dressed slab-cist tombs—typical megalithic monuments—have a cognate kinship with those of the extreme s. of Tamil Nadu. There are certainly some differences in the associated elements at Adichanallur in the types and fabric of the pottery and in the large variety of bronze objects, the like of which is not forthcoming from any of these other areas, in the characteristic forms and sizes of the iron objects which include impressive quantities of hoe-spades, triple-forked spears, horse-bits [15.19] different in form from those, for example, of Dt Chingleput as indicated in the types excavated at SANUR, and in the occurrence of a serrated carnelian blade from one of the burials. The bronze objects which include vegetal, animal, bird and other naturalistic forms, apart from perforated sieve-basins, and an unusual and outstanding example of a bronze statuette of the mother goddess (Aditi?) [12.6] which bears resemblance to the typical repoussé gold-leaf figures of the mother goddesses found in the Ganga valley at LAURIYA-NANDANGARH and PIPRAHWA, all of possibly pre-Aśokan affiliation. In pottery not only are the types generally less than medium in size with several diminutive examples of the bowl, dish, carinated pot, *loṭā*, knobbed lid, etc., but some of the pots have white-painted Black-and-red Ware [11.15] designs also on them. Such paintings have been noticed elsewhere at T. KALLUPATTI and Madurai (Annupanadi) in Dt Madurai and in the Megalithic levels of SANGANA-KALLU and HALLUR. It is not clear if these ceramic traits

are earlier or later than the standard stage of the pre-Christian period to which the urn-burials of Adichanallur themselves can be assigned.

The burials proper would seem to give an impression from the published descriptions that complete bodies in crouching and bent positions were stacked into the urns. The general evidence of the urn-burials in Chingleput and other Dts of Tamil Nadu and outside is that only secondary and fractional burials are found in the urns. Pudukkottai has not yielded any bones even in the urn or in the tomb in a controlled excavation carried out by the ASI.

The skulls [15.2] retrieved from the Adichanallur burials excavated by Rea were studied by Zuckerman, 1930, according to him the crania might pertain to the Dravidian type. In a later examination (Chatterjee and Gupta, 1963) of 13 skulls eight appear to be male and the remaining female. The skulls were much broken and distorted and had to be reconstructed for measurements. They have resemblances, according to them, with the Mediterranean and the Proto-Australoid (as the Veddid types). Since a neat classification between these two groups is not possible, they apparently represent a homogenous and mixed population. According to these authors the present Dravidian stock is of this kind of admixture. These two types appear to be widely available elsewhere in India and at Mohenjo-daro and Harappa.

No specific direct or comparative dating for the Adichanallur burials has been possible, although in view of their qualitative divergences and at the same time basic common factors in the form of pottery, iron objects and the shape of the pyriform peduncular urns it might be appropriate to place them within the chronological framework and time bracket of the Megalithic burials, perhaps in the middle of the 1st millennium B.C. It is customary to date the urn-burials below the AMARAVATI *stūpa*, to the 3rd century B.C. or earlier. Owing to the complex nature of the associated finds the site calls for a controlled and systematic excavation.

The entire proceeds of the excavations of Rea is now in the Government Museum, Madras.

Chatterjee, B.K., & Gupta, P., 1963, *Report on Adittanallur Skulls*, Calcutta. Rea, A., 1888, in *Jour. Asiatic Soc. Bengal*, 7; 1902-3, in *ASI-AR*, 1902-3, p. 118-9; 1915, *Cat. Prehistoric Antiquities from Adichanallur & Perumbair*, Madras. Sen, D.K., 1964 & 1965, in *AI*, 20 & 21, p. 185 (for racial types). Zuckerman, S., 1930, in *Bull. Government Museum, Madras*, N.S. 2, 1, pp. 1-24 (for racial types).—K.V. SOUNDARA RAJAN

Adikarapatti, Dt Dharmapuri. Megalithic cairn circles [4.17.9].

IAR 1970-1.

Adinal, Dt Raichur. Chalcolithic [4.14.8] site.

AR Hyderabad Arch. Dept. 1937-8, p. 8.

Adampalli, Dt Kolar. Megalithic stone circles [4.17.8].

IAR 1972-3.

Adanakottai, Dt Pudukkottai. Megalithic site [4.17.9].

Manual of the Pudukkottai State, Pudukkottai, 1944, pp. 515-8.

Adatala-1, (21°58'; 71°37'), Dt Bhavnagar. Late Harappa site corresponding to RANGPUR II B [4.10].

AI, 18, 19, 1962 & 1963, p. 205.

Adatala-2, 3, Dt Bhavnagar. Early historical site [4.18.2].

IAR 1971-2.

Addagoopah, Dt Bellary. Megalithic site with post-holed cists [4.17.8].

Taylor, M., 1853, in *Jour. Royal Asiatic Soc. Bombay*, 4; 1873, in *Trans. Royal Irish Academy*, 24.

Adegaon, Dt Chandrapur. Palaeolithic site [4.2].

IAR 1959-60.

Aderkatti, Dt Dharwar. Early historical site yielding the Black-and-red Ware [11.15], red-slipped ware and Russet-coated Painted Ware [11.22], areca-nut-shaped beads and polished stone axes.

IAR 1961-2.

Adeva, Dt Kaira. Late Harappa [4.10] site.

IAR 1972-3.

Adiampalli, Dt Kolar. Megalithic site with stone circles and cists [4.17.9].

Information from C. Krishnamurthy through A. Sundara.

Adkot (22°00'; 71°05'), Dt Rajkot, situated on the Bhadar, with a small temporary settlement made by the Harappa [4.10] refugees in the late Harappa days. The pottery is analogous to RANGPUR II B. Another mound opposite the bus-stand at Adkot has yielded late Harappa pottery [11.4] of RANGPUR II B and a poor variety of the Lustrous Red Ware [11.9].

AI, 18 & 19, 1962 & 1963, p. 186. IAR 1957-8.

Adoni¹, Dt Bellary. Neolithic [4.6.9] site with pointed butt polished stone axes.

AI, 4, 1947-8, p. 296.

Adoni², Dt Kumool. Neolithic [4.6.8] site.

IAR 1964-5.

Adrahalli, Dt Dharwar. Megalithic [4.17.8] site with cist circles.

IAR 1961-2.

Adurru, Dt E. Godavari. Megalithic Black-and-red Ware [11.15.3].

IAR 1962-3.

Aduturai, Dt Thanjavur. Neolithic [4.6.10] site with pointed butt polished stone axes.

AR Madras Museum 1936.

Advi-Hulaghal, Dt Bijapur. Microlithic [4.5] site.

IAR 1961-2.

Adwa. See TONKWA.

Agaram¹, Dt Dharmapuri. Megalithic tombs [4.17.9].

IAR 1965-6.

Agaram², Dt Tirunelveli. Megalithic [4.17.9] site.

ASI-AR, 1902-3.

Agarhunda, Dt Banda. Neolithic [4.14.2] site yielding

polished stone celts with pointed butt splayed edge, convex sides and lenticular cross-section.

IAR 1955-6.

Agatgi, Dt Raichur. Site with stone beader and flakes.

AR Hyderabad Dept. of Arch. 1936-7, p. 8.

Aghapur, Dt Bharatpur. PGW [11.14] site.

IAR 1961-2; 1962-3; 1963-4.

Aghiana, Dt Saharanpur. OCW [4.12] site.

IAR 1965-6.

Agoli, Dt Raichur. Megalithic [14.17.8] site with port-holed cists.

AI, 4, 1947-8, p. 308. AR Hyderabad Dept. of Arch. 1936-7, p. 2.

Agraharam¹, Dt Chittoor. Early (Lower Palaeolithic [4.2]) and Middle Stone Age (Middle Palaeolithic [4.3]) site.

Agraharam², Dt Dharmapuri. Megalithic site with dolmens [4.17.9].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Agroha, Dt Hissar, on Hissar-Fatehabad road, at a distance of 22 km from Hissar town, with a high and extensive mound first excavated by Rodgers in 1888-9 (*Report of Punjab Circle of ASI 1889-9*, pp. 41-3) and re-excavated by H.L. Srivastava of the ASI in 1938-9 down to a depth of about 3-65 m. The upper stratum had a few fragmentary walls, but the lower one revealed the remains of a well-planned and prosperous settlement of baked brick. The next lower stratum was touched here and there. The middle stratum was rich in portable antiquities, including terracotta and copper objects, stone sculptures, plaques, grinding stones [6.19], beads, shell bangles and iron implements. While no clear classification of the pottery is available, it includes large earthen jars with incised lines around, spouted jars, *hāndis*, perforated vases and bowls, vases with or without spouts, incense-burners [12.2], cups, lids and dishes. A decorated rattle and a small model shrine a flat oval tablet pierced with two holes at the centre and circular groove all round and animal figurines of terracotta and a sword, spoon, ear ornament and discoid scraper of copper are the noteworthy objects. A stone pedestal with hunting scene and sculptures of Mahisamardini and Kubera belong to the late historical period. Beads of semiprecious stone, shell, clay and glass, ivory and horn finger-rings, shell bangles and a horn libation spoon deserve mention. Of special interest are a burnt birch-bark manuscript in script resembling that of the Bakhshali manuscript of the 9th century and a clay tablet with notes of musical scale in script of the same century.

A hoard of four Indo-Greek and one punch-marked [3.1] coins and another of 51 coins with the legend *Agodaka Agāca janapadasa* were found. The latter establishes the identity of Agroha with Agrodaka.

Srivastava, H.L., 1952, *Excavation at Agroha*, Punjab, Mem. ASI, 61.—A. GHOSH

Agtari, Dt Jaipur. Non-megalithic black-and-red ware of the AHAR² variety found in association with the black-on-red painted pottery. The painted designs, executed in deep-black pigment over a deep-red surface, included horizontal bands and herring-bone and leaf patterns. A bowl of black-and-red ware was painted internally in dull-white wavy lines.

IAR 1958-9.

Aguibani, Dt Midnapur. Copper shouldered axes and rings [4.11].

Information from S. Asthana.

Agwan Pur, Dt Rohtak. Grey ware and early historical ware.

Jour. Haryana Studies, 3, 1, p. 6.

Ahar¹, (28°25'; 78°15'), Dt Bulandshahr, located 43 km e. of Bulandshahr on the right bank of the Ganga. The deserted mound to the w. of the village is known as Kundilpur. Stray antiquities from the site have been recorded from time to time by F. Growse, A. Cunningham, W.E.J. Dobbs, M.S. Vats and others. Growse recorded a mutilated round pillar with its base encircled by snakes and Cunningham found an inscription of Mahipāla of Kanauj in Kuṭila characters [20.4.2], dated A.D. 980 (*ASI-AR*, 12, pp. 27-36). Dobbs discovered another inscription of 28 lines, also in Kuṭila characters, recording the safe investment to the temple of Kana-kadevi in the town of Tattānandapura. Vats explored the site intensively in 1924-5 (*ASI-AR 1925-6*, pp. 56-8, 172-4). He laid five trenches, A, B, C, D and E, A and C of late medieval period, yielding Muslim copper coins and glazed pottery. Trench A revealed seven structural levels and Trench B four, the structures of the second and third phases being the best preserved. The third phase revealed oblong chambers on either side of a long wall, running e. to w., with another series of chambers across in the n. Trench D yielded antiquities of the 10th and 11th centuries. Trench E was not properly examined.

The finds include a hand-grinding mill, mortar [6.19], a casket, a saucer, a spoon, a scythe, a trefoil, a star-shaped boss, a bell, a rattle and five silver coins, three of them of Vīgrahapāla.

During subsequent exploration of the site by the ASI OCW [4.12] and grey ware have been recovered, thus taking back the antiquity of the site far back into pre-Christian times (*IAR 1970-1*).

Growse, F., unpublished note on the history of Bulandshahr in the District Magistrate's Library.—R.P. SHARMA

Ahar², **Ahad** (27°42'; 75°38'), Dt Udaipur, about 3 km e. of Udaipur on the river Ahar, a tributary of the Banas. Though archaeologically it is a rich site, its Sanskrit name Āghātapura first finds mention in epigraphical records only in the 10th-11th centuries A.D. The site thus seems to have been abandoned during the early cen-

turies of the Christian era and reoccupied later after a considerable lapse of time. The mound which originally lay on a bend of the river Ahar is now cut into two. It was discovered and probed by R.C. Agrawala on behalf of the Rajasthan Dept of Arch. (*IAR 1954-5*, p. 14). This led to a joint excavation of the site in 1961-2 by the same Dept and the Deccan College under H.D. Sankalia. The occupation at Ahar has been divided into two Pds, Pd I Chalcolithic [4.14.1] in nature and Pd II marked by the introduction of iron and the NBPW [11.16]. Though chronologically there is a gap between the two it is not attested to stratigraphically and no weathered layer separates them.

Pd I, Chalcolithic. This Pd has been divided into three phases on the basis of the ceramic assemblage. Phase Ia has yielded mostly convex-sided bowls in the black-and-red ware [11.6.2] and sherds of the buff and imitation buff-slipped ware. In Phase Ib there is an absence of the buff and buff-slipped wares, while the grey ware, cut ware and ribbed ware occur in large quantities. In Phase Ic the sharply carinated bowl appear in the black-and-red ware together with the Lustrous Red Ware [11.9]. The black-and-red ware is however the most distinctive pottery at the site. It is often painted with white before firing, so that sometimes only the impressions of designs or negatives are left. The bowl is the most recurrent type in this ware, next in frequency being the globular vessel, the *lotā*-like vessel and the jar. A few sherds bear grafito marks [20.1]. The associated wares include the metallic grey ware, the unburnished and burnished grey wares, the red-tan metallic ware and the red-slipped ware. Of great interest is the bowl and the dish-on-stand in the metallic grey ware. A common type in the unburnished and burnished grey wares is a flat, shallow, coarse-bottomed vessel called the pan and identified with the present-day *tavā*. The stepped dish in the red-tan metallic ware made of well-levigated clay and finely finished shows similarities with the Harappa pottery [11.3].

The plinths of the houses were made of blocks of schist with black and brown sticky soil as mortar. The stones were well-dressed on the outer face and irregular on the inner. The walls were of clay mixed with cow-dung and quartz nodules and the floors were prepared by firmly ramming the black and brown soil. Though no complete house plans have been found, a few walls have been exposed. On the basis of these it may be surmised that the houses were large, often 9 m in length and partitioned into smaller rooms. The longer axis was usually oriented n.-s., while the shorter axis was e.-w. Large rectangular *chulhās* with more than one arm have been found in these structures. Near these lay saddle querns [6.19]. Another feature of these houses was that storage pots were often kept sunk into the floor.

There is a complete absence of stone tools at the site, only six fluted cores of chert, chalcedony and quartz having been found, while a couple of microliths were found in the middle and upper strata in the previous excavation. Surprisingly however a few Middle Palaeolithic tools [4.3] such as scrapers and borers made on quartz have been collected. It has been suggested by the excavator that the hills around Udaipur are full of quartz veins which could have been used in Middle Palaeolithic times. These were also exploited in the Chalcolithic period for collecting quartz nodules used in the walls. It is quite likely that in the process Middle Palaeolithic scrapers found their way into later structures.

Copper was used for a variety of objects such as celts, rings, bangles and knives. Together with these metallurgical slag was also found in a number of trenches. This shows that Ahar was possibly a copper-smelting centre in this Pd. A metallographic study conducted on one of the axes shows that it was cast in a crude unventilated sand or earth mould [16.10] and was left in the cast condition.

This Pd has yielded a large number of beads, clay being the most common material. These terracotta beads are largely handmade though some show regular striations indicating that these were possibly fashioned on a rotating needle. They are either plain or decorated with incised designs. These beads are so far unique in India though some of the designs are similar to those reported from w. Asia. Beads of semiprecious stones, shell, faience and steatite do not show any unusual features, though the last two are only meagrely represented. Other finds include: terracotta skin-rubbers [18.4], ear-studs, toys, discs [6.7.3] and balls; stone balls, hammer-stones, mace-heads and mullers; bone points; and shell bangles.

An analysis of the plant remains shows that a long-seeded variety of rice, *Oryza sativa* Linn. var. *Sativa Bor* was in use. Together with this, bones of *Bos indicus* (cow), buffalo, goat, sheep, pig and dog are also found in large numbers, though bones of the ass are few. Other species represented are the deer, birds, reptiles and fish.

¹⁴C dates show that Pd Ia ranges between 1940 \pm 95 B.C. and 1765 \pm 95 B.C., while the solitary date for Pd Ib is 1725 \pm 110 B.C. The last Pd Ic covers a span between 1550 \pm 110 B.C. and 1270 \pm 110 B.C.

Pd II, early historical. The occupants of this Pd settled directly on the debris of the previous Pd as is amply attested to by the numerous pits which disturb the horizon of Ic. Hence a good deal of early historical material has been found in the layers of the earlier Pd. Sahi, 1979, has shown that iron has been found in Pd Ic, though the excavator says that it occurs only in Pd II. Pd II is also divisible into three phases on the basis of the ceramic assemblage. The pottery of IIa shows affinities with the

Rang Mahal ware [11.24] and comprises: red wares with a preponderance of red wash; red wares painted in black bands over a murky-red wash; and a coarse black-grey ware and grey ware with mica coating. The pottery of IIb is made up almost entirely of a red ware with or without a wash. There are only three sherds of the micaceous grey ware and one of dull-black painted in red bands. The ceramics of IIc consist of the ware with red wash, ware with red slip and mica coating, blotchy black-and-grey ware and red ware painted in black over red slip.

The evidence for structures in this Pd is scanty and is limited to a well-made compact floor, mud-walled structure and a ring-well [14.15]. Two huge storage jars contained ash, charcoal and animal bones and appear to be pot-burials.

The layers of Pd II also yielded six coins, one of them belonging to king Apollodotus who ruled about the 2nd century B.C. and three seal impressions bearing legends in Brāhmi dated palaeographically to the early centuries of the Christian era. Copper objects comprised rings, bangles and antimony rods [18.1], whereas as many as 79 objects of iron were found. Of these 36 were iron slag pieces. Arrowheads were prominent in the repertoire of tools, the other identifiable implements being axes, nails and chisels. Glass was represented by four fragments of monochrome bangles. The recovery of shell bangles and ear-studs together with numerous waste pieces suggests local manufacture. Other finds include bone points, terracotta skin-rubbers, votive tanks [12.11], toys and human figurines and beads of terracotta and semiprecious stones.

Impressions of husks on potsherds imply the cultivation of millets. This is an important evidence, because even though millets find mention in ancient Sanskrit literature factual evidence is wanting in n. India. Another point to be stressed is that though the husk impressions occur in the top levels of Pd Ic, the evidence should be treated as early historical owing to the disturbed nature of the deposit.

To recapitulate, chronologically Pd IIa is associated with the NBPW and seals datable to the 3rd century B.C., Pd IIb is characterized by the painted wares of the Kushan times and Indo-Greek coins, while IIc has yielded mica-coated pottery which appears to be late medieval.

Sahi, M.N., in Agrawal, D.P., & Chakrabarti, D.K., ed., 1979, *Essays in Indian Protohistory*, Delhi. Sankalia, H.D., Deo, S.B., & Ansari, Z.D., 1969, *Excavations at Ahar (Tambavati)*, Poona.—H.P. RAY

Aharwan, Dt Gurgaon. PGW [11.14] site. A large number of brick structures belonging to the Śuṅga-Kushan periods were noticed in the exposed sections and rain-gullies.

IAR 1966-7.

Aherdi, Dt Surat. Lower and Middle Palaeolithic [4.2.3] and Mesolithic [4.5] tools.

JAR 1967-8.

Ahicchatra, Dt Bareilly, known in ancient literature also as Ahicchatra and Adhicchatra, the capital of N. Pañcala, identified by A. Cunningham (*ASI-AR*, 1, pp. 255-66) with the ruined fort near village Ramnagar between the Ramganga and Ghangan, 11 km n. of Aonla, a Tehsil headquarters, though the fort is in the revenue jurisdiction of Nusratganj, the adjacent village. The fortification, 5-60 km in circuit, rises prominently above the surrounding fields and encloses a series of rolling mounds, the highest of which, representing a ruined temple (see below), rises to height of 23 m from the field level. A feature of the fortification is that a long n.-s. partition wall abutting at both ends against the main fortification wall was built at a late stage of the city's life dividing it into two sectors, e. and w. The e. sector ceased to be occupied earlier than the w.

Cunningham identified a few sites, including *stūpas*, inside and outside the fortified area mentioned by Hiuen Tsang but they can no longer be located. He also excavated a *stūpa* of solid brickwork within which he found a small steatite box with seed pearls, blue glass, a large bead of stone amber, large bits of rock crystal and other beads. Later on Führer partially excavated a temple with indifferent results.

The ASI under K.N. Dikshit assisted by the writer and others conducted extensive excavations here during 1940-4. For purposes of excavation the whole of the fortified area was divided into plots designated as AC I, AC II, AC III, etc., each plot a distinct mound separated from each other by long depressions, possibly roads. Among the excavated plots it was in AC III in the w. sector that digging was started at a sufficiently high level to ensure that the area had been in occupation till the last days of the city and was carried down to the natural soil. AC III thus represents a cross-section of all the structural stages of the w. sector and provides a stratigraphic basis for dating objects found elsewhere in the city.

Nine Pds of occupation were identified in AC III, and following the custom then prevalent (at least in India) they were called 'strata', their numbering starting from the top to bottom. The strata could be surely dated by the coins they yielded. While Stratum IX, the lowest, was represented only by pits cut into the natural soil, strata VIII and VII, excavated in a limited area, had mud and mud-brick houses; the former had round cast coins with simple symbols and the latter square ones [3.1] with more complex symbols. Strata VI and V, both with scanty remains of baked-brick structures, had in addition to cast coins those of the Pañcala rulers of the first century B.C. Stratum IV, with blocks of single contiguous chambers of burnt brick, measuring 46×23×

5 cm, had Kushan coins and at its later stage imitation Kushan coins. Stratum III had four phases of construction and renovation of a temple complex with the unusual plan of a central square altar within an irregular compound, the w. wall of which had small cells to contain terracotta, deities. The stratum was marked by the first appearance of coins of Acyu, unanimously identified with Acyuta who was defeated and whose territory was annexed by Samudragupta in the first half of the 4th century. Acyu coins continue to occur till the last days of site, perhaps due to the shortage of other coins that could replace them. Stratum II was devoid of and significant structures but had a large number of pits filled with ash and potsherds probably representing potter's kilns and was without coins (except those of Acyu), but Stratum I had below its walls three hidden hoards of 203 debased Indo-Sassanian coins of Adivaraha and Vighraha. The houses of this stratum had rooms roughly built of brickbats at the back and a spacious court in front, showing that the city was then sparsely populated and ample open space was available. A feature of the excavated area was the existence of a road consolidated again and again with the rising level from Stratum III down to Stratum VIII.

On the basis of the find of coins as mentioned above, the following dates have been proposed for the different strata: Stratum IX, before 300 B.C.; Stratum VIII, 300 to 200 B.C.; Stratum VII, 200 to 100 B.C.; Strata VI and V, 100 B.C. to A.D. 100; Stratum IV, A.D. 100 to 350; Stratum III, A.D. 350 to 750; Stratum II, A.D. 750 to 850; and Stratum I, A.D. 850 to 1100.

The two tallest mounds, one in AC I and the other in AC II, turned out on clearance to be terraced temples of brick, each terrace made on foundation cells round a square frame, filled with earth. Both of them underwent many restorations and extensions resulting in the increase of their dimensions. The larger of them was founded on a layer with typical Stratum IV (Kushan) pottery and could not therefore have been founded before the early Gupta age. Loose in its debris were found a large number of carved bricks and a few terracotta sculptured panels that once adorned the walls of the temples. A pair of highly artistic life-size Gaṅgā and Yamunā figures was evidently placed at the entrance.

It has been said above that a partition wall divided the city into two unequal halves, the e. and smaller half having been deserted earlier. The fact that the wall ran over the lowest terrace of the e. temple in AC I shows that it was erected fairly late in the life of the city when the temple, itself of Gupta construction, had fallen into disuse.

The main fortification of the city was partially excavated at two places and it was found that below the top brick wall there were two successive mud ramps.

From the fact that grey pottery appeared in the core of the heaped-up material it seems likely that the original rampart was erected around 100 B.C. and can be attributed to the Pañcāla rulers with whom the first baked-brick walls of the site were coeval.

The site is extremely rich in antiquities, of which the pottery (Panigrahi, 1946), terracottas (Agrawala, 1947-8) and beads (Dikshit, 1952) have been published, the first two have provided for the first time corpuses for the chronological study of the corresponding objects in the upper Ganga valley.

The pottery of AC III has been classified into three groups: early, intermediate and late. The early groups, consisting of material from strata IX to VII, includes the grey ware, now known from sites like Hastināpura and elsewhere to be contemporary with the NBPW [11.16]; though not found in AC III, the NBPW is found in the e. sector, which also has the PGW [11.14]. In fact the identification of the NBPW and PGW was for the first time established at Ahicchatra (Wheeler and Krishna Deva, 1946), the mutual chronological relationship of the two at that time remaining uncertain, though it was significantly remarked that the indication was that 'the painted wares [PGW] and the black polished wares [NBPW] were coeval with each other' and that 'the priority of the painted to the black polished wares must be regarded as probable,'—an observation amply confirmed by subsequent excavations elsewhere in the upper Ganga valley with the modification that the priority of the PGW to the NBPW, regarded then as probable, is now well-established as also the overlap of the two wares towards the end of the former and the beginning of the latter.

In the intermediate group, strata VI and V, grey ware and the NBPW completely disappear. Decoration on red ware is formed by the stamp of symbols found on coins of the 1st century B.C. to the 3rd century A.D. Most of the vessels are devoid of slip or wash.

In the late group, strata IV to I, the pottery shows a large variety. Stratum IV has many innovations in types and decoration. Carinated and 'waisted' jars and bottle-necked jars (*surāhi* type) are typical of the period, as also vessels stamped with *nandi-pada*, *svastika*, twin fish and other symbols common on tribal coins [3.1].

While the lower levels of Stratum III ceramically form a family group with Stratum IV, the upper levels show strong affinities with the upper strata. The guide types are all handmade. The mould-made decorated vessel appears in the last two stages of occupation and show a distinct refinement in potting and decoration. The best guide-characteristics are found in the finer jars having two or three cordons with ribbings or ridges demarcating their limits and showing on the reserved bands a polished red ground and on the decorated bands designs

such as beads or fish-scales in relief. Powdered mica is sometimes used as a wash on the decorated bands. A medium-sized jar is shaped and decorated in relief with bristles in imitation of a young jack-fruit, with a reserved neck portion showing a polished red ground.

Stratum II is characterized by the mould-made decorated bowl bearing on the slipped red ground a variety of designs in relief.

Stratum I retains the basic earlier features but has at the same time new utilitarian devices. Thus the cooking vessel, with a ridge to mark the transition between the upper and lower bodies, has lug handles or indented rims. The ring-stand for the large storage jar replaces the practice of scooping out of the mud floor to keep the jar in position.

Mother goddess figurines [12.6] in grey ware are a distinctive feature of the terracottas of Stratum VII. Allied to their Mathurā counterparts, they are crude and entirely handmade, with facial features of a bird or animal and represent a predetermined iconographic concept. A sole moulded head has its head-dress in a trefoil pattern and streamers falling on each side of the head. Suñga and Pañcāla moulded plaques from strata VIII and VII represent *mithuna* types and allied individual male and female figures. Dwarfs and grotesque figures are characteristic of Stratum IV. The votive tanks [12.11] of the age provide definite evidence of their association with the mother goddess. Gods and goddesses—Viṣṇu, Sūrya, Gaṇeśa and Mahiṣamardini—occur among the figurines from strata III to I, some of them are excellent specimens of classical art. A peculiar type, both male and female from Stratum III, has goat-like features and long dangling ears with pierced holes or slit marks, a hooked nose and deep-cut slit mouth; the figures are believed to represent Naigameśa. A large number of figurines from Stratum III, conforming to a set art style, are cast from single moulds with moderate relief; they are remarkable for the great variety of hair styles. A small group of female heads shows the head covered by a veil. Also characteristic of the Stratum is the mother-and-child type. Horse- and elephant-riders produced out of double moulds are found in the middle levels of the Stratum, as also figures with foreign ethnic features in its early and middle levels. Hollow round plaques, one of them with reliefs of elephants in different poses, are another product of the Stratum. Large plaques with mythological scenes, such as Śiva-gaṇas destroying Dakṣa's sacrifice, Śiva as Bhairava and as a beggar and the fight between two warriors (Kīrātārjuniya?), are from the debris of the temple in AC I and must have adorned the walls of the temple. Fighters or wrestlers (*mallas*), deities on thin plaques and plaques with roughly executed male and female figures—probably representing *sati* scenes (*sati-*

sattā plaques)—are typical of Stratum I.

Among the beads, which represent only a few special types, two eye beads of agate, both from Stratum VIII, etched beads of agate and carnelian from different levels and leech beads from uncertain levels deserve special mention. Beads of faience [16.6], which regained a short-lived popularity in India in the few centuries before and after Christ, are confined to Stratum III. Gold-foil beads, in which a layer of gold foil is pressed on a glass matrix when hot and is laid over again with another coating of transparent glass, have a wide distribution in India; at Ahicchatrā they occur in strata III and I.

Further excavation at Ahicchatrā was undertaken by N.R. Banerjee of the ASI in 1963-4 and 1964-5 (*IAR 1963-4*, p. 43; *1964-5*, p. 39) in the e. sector of the fortified area, which, as stated above, seems to have had an earlier origin and end. Pd I, without any structural remains and clear-cut deposit, had the OCW [4.12] over the natural soil. Pd II was characterized by the PGW and a red-ware dish-on-stand. Mud bricks and a broken baked brick were present. Both copper and iron were known. A terracotta object with flattened bits of stone fixed in a mosaic pattern on blocks of flattened clay in the shape of truncated bicones was evidently used for grinding purposes. Similar objects are reported from the corresponding levels of HASTINĀPURA, ROPAR and ALAMGIRPUR. Pd III, with overlaps with the preceding and succeeding Pds, had the NBPW with the usual associated red ware. Baked bricks were in use; there was also a mud floor with multiple ovens. Pd IV had the Kushan bowl, sprinkler, inkpot-shaped lid [20.2] and jar with stamped decoration; Pañcāla, Kushan and Agyu coins were present. Houses of burnt bricks of four sizes (43.7 × 26.67 × 5.08 cm; 41.6 × 22.67 × 5.71 cm; 44.97 × 25.4 × 6.35 cm; and 25.4 × 25.4 × 6.35 cm) were in evidence.

The rampart was seen to have been initially built of mud in the beginning of Pd IV as evidenced by sherds of the PGW and NBPW in its core. In the second phase was erected a brick wall 4.98 in width and 2.59 m in extant height with rectangular gaps in its core. In the third phase the brick wall was protected by a mud cover, which again was buttressed in the fourth phase. Lastly gaps in the outer wall or mud packing were filled with fragmentary walls of brick and brickbats.

Agrawala, V.S., 1947-8, in *AI*, 4, pp. 104-79 (for terracottas). Dikshit, M.G., 1952, in *ibid.*, 8, pp. 33-63 (for beads). Führer, A., 1969 (reprint), *Monumental Antiquities & Inscriptions of the N.-W. Province and Oudh*, Varanasi, p. 26. Ghosh, A., 1946, in *AI* 1, pp. 37-40 (for general introduction and chronology). Panigrahi, K.C., 1946, in *ibid.*, 1, pp. 40-55 (for pottery). Wheeler, R.E.M., & Krishna Deva, 1946, in *ibid.*, 1, pp. 55-9 (for PGW and NBPW).—A. GHOSH

Ahir, Dt Saharanpur. PGW [11.14] site.

IAR 1967-8.

Ahmadgarh, Dt Bulandshahr. Black-and-red ware, PGW [11.14], grey ware, Black-slipped Ware [11.13] and red ware of the Śuṅga-Kushan period.

IAR 1970-1.

Ahmadnagar, Dt Ahmadnagar. Microlithic [4.5] site.

IAR 1956-7.

Ahmadpur Hill, Dt Vidisha. Painted rock-shelters [13] were discovered on the Vidisha-Bhopal road, 18 km from Vidisha. Palaeolithic [4.2] and microlithic [4.5] tools were found on the slopes of the hill.

Khare, M.D., 1977, paper read at Madhya Pradesh Itihasa Parishad, Annual Session, Bhopal.

Ahranva, Dt Gurgaon. PGW [11.14] and early historical site.

Punia, D.S., 1976, unpublished thesis.

Aihole, Dt Bijapur. Lower Palaeolithic [4.2] and Megalithic site with port-holed cists and passage chambers. An early historical site with pre-Cālukyan brick structures and coins was located in the cultivated field away from the larger Jain cave.

Indian Antiquary, 3, pp. 306-8; *Karnataka Bharati*, 9, 4, p. 79; Sundara, A., 1975, *Early Chamber Tombs of S. India*, Delhi, pp. 30-6.

Ainapur (16°08'; 74°20') Lower Palaeolithic site. See GHATAPRABHA VALLEY.

Ainapur Harali, Dt Kolhapur. Megalithic [4.17] site with passage tombs.

IAR 1966-7.

Airahalli, Dt Mysore. Megalithic burial [4.17.8] site.

IAR 1968-9.

Airaini, Dt Dharwar. Early historical remains.

IAR 1960-1.

Aiyarattali, Dt Thanjavur. Megalithic [4.17] site yielding Black-and-Red Ware and early historical remains.

IAR 1964-5.

Ajabpura, Dt Vadodara. Early historical site yielding sherds of amphorae [11.19], Kṣatrapa coins and a terracotta seal with Brāhmī legend reading Varunadeva.

IAR 1968-9; 1969-70.

Ajamer (22°40'; 70°50'), Dt Rajkot. Transitional phase of Harappa culture [4.10] corresponding to RANGPUR II C.

AI 18 & 19, p. 205.

Ajanad Bungalow, Dt West Khandesh. Chalcolithic [4.14.6] burial site.

IAR 1959-60.

Ajaneraghar, Dt Ballia. NBP ware [11.16].

IAR 1963-4.

Ajanta caves, Dt Aurangabad. On either bank of the river Waghora Middle [4.3] and [4.4] tools were found near the Ajanta caves with world-famous paintings.

IAR 1965-6. Joshi, R.V., & Pappu, R.S., 1979, in *Man & Environment*, 3, p. 86.

Ajaram, Dt Hoshiarpur. Site yielding Black-slipped Ware [11.13], and black-and-red, black-painted red, stamped and medieval wares and coins of Taxila, Indo-

Greeks, Kushans and Kangra kings. As indicated by two layers of ashy material, seen in all the exposed sections of the mound at different places, the site seems to have been burnt successively.

IAR 1969-70.

Ajjampatti, Dt Dharmapuri. Megalithic site with dolmens [4.17.9].

Sewell, R., *Antiquarian Remains in the Presidency of Madras*.

Ajmel, Dt Kutch. Historical site yielding a coarse red and a cream-slipped red ware, often painted.

IAR 1965-6.

Ajmeripur, Dt Saharanpur. Site with Śunga-Kushan red ware.

IAR 1965-6.

Ajota, Dt Sorath. Red Polished Ware [11.23].

IAR 1957-8.

Akabarpur-Baroth, Dt Rohtak. PGW [11.14] and NBPW [11.16] site.

IAR 1960-1, p. 65. *Jour. Haryana Studies*, 3, 1, p. 6.

Akahintala-Gollahalli, Dt Kolar. Megalithic burial [4.17.8] site.

IAR 1969-70.

Akalgarh. See MOONAK.

Akalpada, Dt Dhule. Late Stone Age (Mesolithic [4.5]) site.

IAR 1964-5.

Akaori, Dt Sidhi. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3] site).

IAR 1962-3.

Akavidu, Dt Kurnool. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3] site).

IAR 1964-5.

Akbarabad, Dt Nellore. Lower and Middle Palaeolithic [4.2.3] site in the Pannar valley.

IAR 1965-6.

Akbarpurgarhi, Dt Meerut. Red ware of Śunga-Kushan assemblage and medieval ware.

IAR 1962-3.

Akhada, Dt Dhule. Site with Late Stone Age (Mesolithic [4.5]) tools.

IAR 1965-6.

Akhatvada, Dt Dhule. Site with palaeoliths [4.2] and microliths [4.5].

IAR 1960-1.

Akhbai, Dt Agra. PGW site [11.14].

IAR 1959-60.

Akhnur, Dt Jammu, explored by the ASI in 1961-3 (IAR 1961-2, p. 16; 1962-3, p. 9), which brought to light a few plain red and black-painted red ware sherds with varied designs. The red ware types include the bowl with a sharp-edged rim and thickened base, vase having splayed-out flat rim, bottle-necked jar, sprinkler [11.23], basin, handle, spout etc., some of them slipped. Some sherds bear incised decorations. The site is assignable to the early part of the Christian era.

—A. BANERJI

Akhrar, Dt Shahdol. Middle Stone Age (Middle Palaeolithic [4.3] tools found in the bed of the Chhoti-Mahanadi.

IAR 1962-3, p. 69.

Akiliyasala. See BOGGERU VALLEY.

Akiripalli, Dt Krishna. Neolithic [4.6.8] celt and Megalithic [4.] burials.

IAR 1969-70.

Akkadia Mota, Dt Amreli. Neolithic (Mesolithic? [4.5]) scrapers, cores and flakes.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Akkadu, Dt Thanjavur. Megalithic Black-and-red Ware [11.15.3], all-black and coarse red-slipped wares.

IAR 1964-5.

Akkammakonda, Dt Anantapur. Neolithic [4.6.8] habitation site yielding celts, adzes, axe-hammers, chisels, hammer-stones fabricators, pounders, rubbers, slings, scrapers, flakes and microliths. Pottery comprises predominantly grey ware.

IAR 1965-6.

Akkanna-Madanna, Dt Krishna. Sherds of the Megalithic [11.15.3] Black-and-red Ware and all-black ware found in the compound of the Akkanna-Madanna caves.

IAR 1962-3.

Akkannapalli, Dt Medak. Megalithic stone circles [4.17.7].

IAR 1961-2.

Akkuragal, Dt Bijapur. Neolithic [4.6.9] and Megalithic burial [4.17.8] site.

IAR 1965-6. Sundara, A., *Early Chamber Tombs of S. India*, Delhi, pp. 30-4.

Akkur¹, Dt Dharwar. Site on the bank of the Varada ascribable to the Sātavāhana period.

IAR 1957-8.

Akkur², Dt Thanjavur. Megalithic Black-and-red Ware [11.15.3] and all-black ware.

IAR 1964-5.

Akoda, Dt Bhind. PGW [11.14] and NBPW [11.16] site.

IAR 1961-2.

Akodra, Dt Udaipur. Microlithic [4.5] site in the Berach valley.

IAR 1962-3.

Akola¹, Dt Ahmadnagar. Tools of Series II (Middle Palaeolithic [4.3]) and occasionally Series I (Lower Palaeolithic [4.2]). See PRAVARA VALLEY.

IAR 1959-60.

Akola², Dt Aurangabad. Tools of Series I (Lower Palaeolithic [4.2]) and structural remains of the Sātavāhana period showing traces of a good drainage system.

IAR 1955-6; 1967-8.

Akora, Dt Nagaur. Late Stone Age (Megalithic [4.5]) site.

IAR 1965-6.

Akota. See VADODARA.

Akote, Dt Mysore. Megalithic cairn-circles [4.17.8].

IAR 1962-3.

Akrabas, Dt Bulandshahr. OCW [11.15], red ware of the Sunga-Kushan period and medieval ware.

IAR 1970-1.

Akrala, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1961-2.

Akrau, Dt Gohilwad. Late Harappa [4.10] site with the dish-on-stand, handled bowl, etc., chert blades and scrapers of jasper and agate.

IAR 1957-8.

Akria, Dt Rajkot. Site with the Red Polished Ware [11.23].

IAR 1957-8.

Akru (22°15'; 71°55'), Dt Ahmedabad. Late Harappa [4.10] mound yielding pottery types analogous to RANGPUR II B and II C.

AI 18 & 19, 1962 & 1963, p. 205.

Akshaypur, Dt Purulia. Microlithic [4.5] site.

IAR 1959-60.

Akshintala Gollahalli, Dt Kolar. Megalithic [4.17.8] site with stone circles and cists.

Information from C. Krishnamurthy through A. Sundara.

Akteswar, Dt Bharuch. Middle Palaeolithic and Mesolithic [4.3, 5] site.

IAR 1967-8.

Alagappadi, Dt Dharmapuri. Mesolithic [4.5] site.

IAR 1969-70.

Alagapuram, Dt Salem. Megalithic [4.17.9] site with cairns.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras, p. 201.

Alagarai, Dt Tiruchchirappalli. Pd I has painted and plain sherds of the Black-and-red Ware [11.15.3] and Russet-coated Painted Ware [11.22], besides large pyriform urns with human skeletal remains and other grave furniture. To the s. of this urn-field is a couple of Megalithic circles without cairn filling. There are shell bangles, beads of shell and glass, terracotta beads and ear ornaments. Pd II shows a decrease in the quantity of the Russet-coated Painted Ware and an increase of red ware with medium and coarse fabric. A crude variety of the Black-and-red Ware, one of them inscribed, persists. Pd III has both slipped and unslipped red ware and a Vijayanagara copper coin indicative of its date.

Champakalakshmi, R., 1975-6, in *Purātattva*, 8, p. 113.

Alambadi¹, Dt Coimbatore. Megalithic site with dolmens [4.17.9].

Sewell, R., 1880, *Antiquarian Remains in the Presidency of Madras*, Madras.

Alambadi², Dt Mysore. Site with Megalithic cist burials [4.17.8].

IAR 1961-2.

Alamgirpur (29°29'; 77°1'), Dt Meerut, 3 km off the left bank of the Hindon, a tributary of the Yamuna,

27 km w. of Meerut and 45 km n.-e. of Delhi. The mound, known as Parasuram-ka-khera, measures about 60 m e.-w. and 50 m n.-s. The Regional Camp Committee of the Bharat Sevak Samaj dug up a long trench here in 1958 and collected such pottery, beads and such other objects as attracted them. While examining this material the author felt that some of the fragmentary objects indicated a possible Harappa affiliation. Accordingly in 1959 he excavated part of the site afresh and also scraped the previous trench (IAR 1958-9, p. 50) on behalf of the ASI. Excavation confirmed the suspected affiliation and exposed a sequence of four Pds, all with a break in between. Speaking broadly, the Pds are: (1) combined Harappa [4.9] and BARA; (2) PGW [4.15]; (3) early historical [4.18.1]; and (4) late medieval.

Pd I. The thickness of the deposits of the lowest Pd measures 1.2 m, wherein Harappa, BARA and some new but related wares lie in an approximate ratio of 10:60:30 respectively.

The more notable among the mature Harappa types are: the dish- or cup-on-stand; cylindrical vase with grooved interior; scored Indus goblet with pointed base; sieve with animal-headed handle; perforated jar; small cylindrical beaker; and small elliptical vase with 'button' base. The jar with long neck and flaring mouth, dish-on-stand with painted sloping or drooping rim and lid with out-turned rim painted with oblique lines may be regarded as clear BARA types. Typical BARA paintings become scarce there, while incised designs almost disappear.

The carinated dish of dish-on-stand, jar-stand, lid with central knob and beaker with constricted lower profile are among those types which are common between mature Harappa and BARA cultures. In addition there are sturdy bowls and dishes with flaring sides which terminate in 'thumb'-sectioned, bevelled, beaked, clubbed, out-turned or flattened rims, variants of which are popular at Mohenjo-daro and at the Sutlej sites but not at Harappa. Jars and vases, painted with series of bands, some rather wide, are available with different profiles and suggest perhaps new and regional variants of old shapes. The painted motifs include triangles, squares, large spirals with tuft-like central terminals, intersecting circles, bipinnates, petals and the peacock. These designs or objects are either hatched with parallel or criss-cross lines or completely filled in black.

A large pit containing a crushed pile of thick platters and basins was perhaps part of a potter's establishment. The platters presumably used for rolling out *chapātis* have either a ring base or three stubby legs. Some of the basins are open at the base. One of the platters and two basins bear a short incised inscription with two symbols,

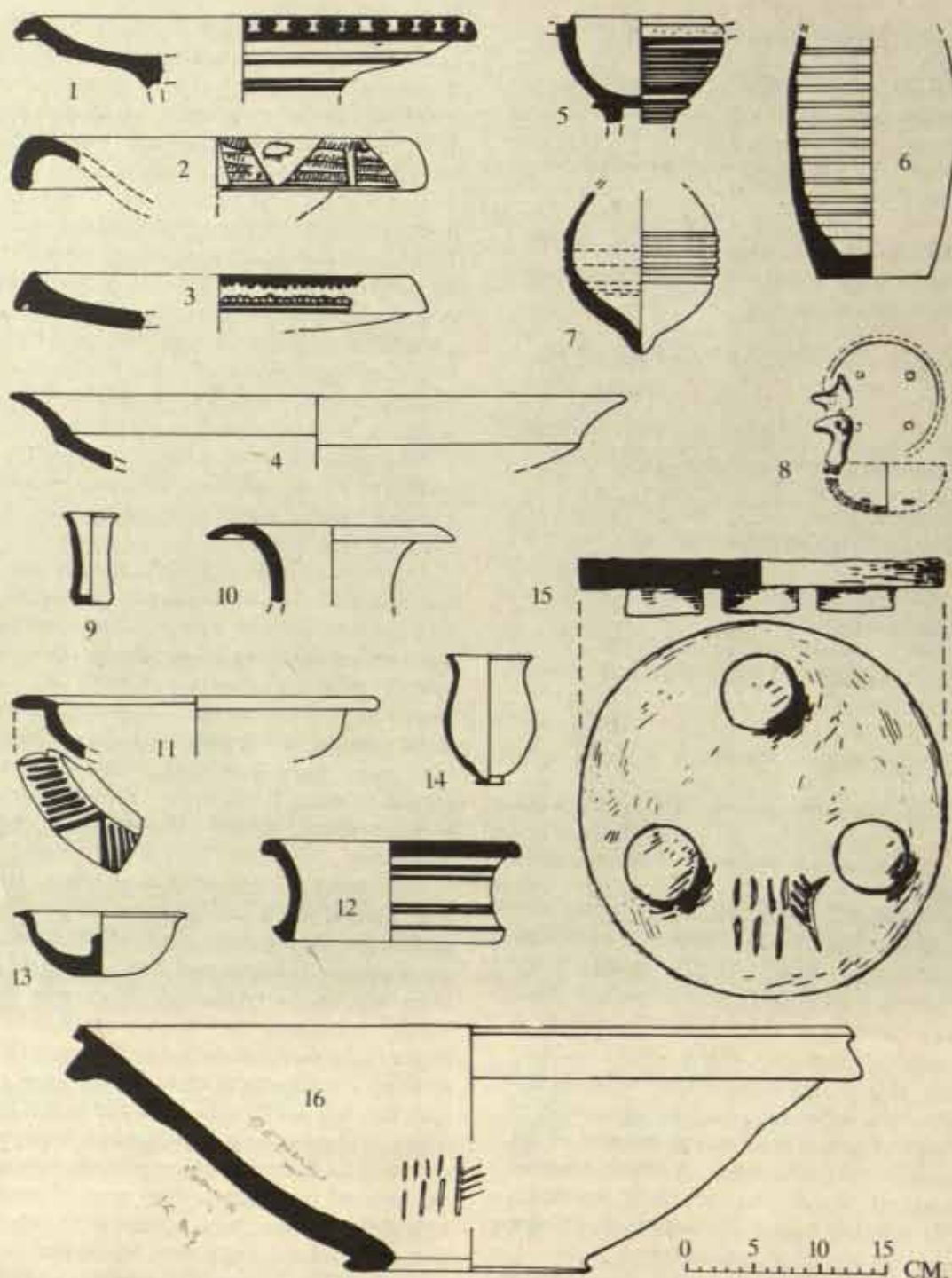


Fig 1. Alamgirpur pottery, Period I.

probably the potter's name or mark. One of these symbols in an inscription is reversed, probably by mistake. One of the basins developed a crack before it was baked: the cracked parts were secured with strings through holes and then a piece of cloth was put over the broken surface with the result that after baking the impressions of the cloth became permanent and pro-

vides interesting evidence of textile in 'plain weave'.

Fragmentary mud walls, reed-impressed burnt clay lumps of daubed wattle construction and several kiln-burnt bricks provide evidence of structural modes. The bricks fall into two groups, the smaller size with minor variations measuring $7 \times 15 \times 30$ cm and the larger one $10 \times 20 \times 35$ cm, so that the former maintains the

standard Harappa ratio of 1:2:4 between thickness, width and length. Some of the bricks bear froggings of three finger-marks, either along the length or diagonally at the corner, a peculiarity also noticed at SANGHOL. Fragments of oblong roofing tiles have also been found, particularly in the pit with crushed pottery.

No human figurine has been noticed. The few animal figurines, mostly fragmentary and unidentified, include a humped bull and a snake. Other terracotta objects comprise triangular cakes [6.27], cart-frame [16.17], models of door-frame and door-leaf, cubical dice [6.7.1], gamesmen [6.7.2], bangles and beads. A small fragmentary terracotta piece, possibly a bead, is coated with gold. Faience is used for the manufacture of bangles, beads and miniature bowls, steatite paste for short cylindrical and thin discular microbeads and semiprecious stones for beads, which include carnelian, long barrel banded agate and tiny triangular pyramids of quartz and carnelian. A limited use of bronze or copper is evidenced by unidentified pieces, pins and a fragment of thick flat celt.

Two phases of construction have been noticed while salvaging the evidence from the previous trench. Overlying the natural soil has been observed a consolidated and edged mud surface which had become reddish as a result of some firing operation. Close to it, inside a pit lay a number of terracotta cakes and potsherds. In the second phase a mud wall was laid to cover the earlier edging and the pit, and another portion of the surface was consolidated and edged. To its e. was a single brick course enclosing a small *kankar*-lined pit, which appeared to have served as a furnace. In fact the whole complex looked like the workshop of a potter or craftsman.

The entire assemblage of Pd I suggests that the combined community following Harappa and BARA traditions in pottery reached here from the Sutlej region and during this movement shed off some of the original characteristics and acquired new ones.

Pd II. Evidence of a break between Pds I and II is provided by an abrupt change in cultural material, clear difference in the composition of layers and the fact that the top of Pd I was strewn over with weather-worn tiny bits of pottery. While the layers of Pd I are compact and brownish those of Pd II are loose, ashy and with frequent bands of burnt earth. Besides the top surface of Pd I had become hardened and calcareous before the arrival of the PGW people. On a part of the mound this surface was apparently utilized during Pd II for threshing or pounding operations as suggested by consolidated hard surface possessing mortar depressions.

The average thickness of the deposits of Pd II is 1.35 m, with the PGW, black-slipped [11.13] and dull-red wares. The types in former two wares are dominated

by the dish and bowl and agree largely with those at HASTINĀPURA and ROPAR. In addition, the black-and-red ware [11.6.3] also occurs in very limited numbers. A bowl in this ware has a convex base and a grooved minor carination at the shoulder. A black-slipped grey-ware bowl had an open work design cut through the section.

Copper was still in use, but iron had also firmly come into its own, as evident from a spearhead and two arrowheads, one of them barbed, apart from nails and pins. A new tradition in terracotta animal toys [6.7.4] is provided by two wheeled animals, a bull and a ram, with perforated faces to pull them by means of strings. The beautifully modelled bodies of the animals bear incised lines. A semicircular grey-ware object with its hollow interior divided into two portions remains unidentified. Among other terracotta objects may be named bangles, vase-shaped beads and ornamented discs. Bone is the material for dice, styluses, 'mother goddess' pendants, pins and points, perhaps arrowheads. Small reel-shaped discs of black jasper, vitreous paste and bone were perhaps used as ear studs. Bangles were made of baked clay and beads of glass.

Only a fragmentary mud wall has been noticed in the upper levels of the Pd. Burnt clay lumps with reed impressions have however been found in large numbers suggesting that the houses were built of daubed wattle.

Pds III and IV. Remains of Pd III, with an average thickness of less than 30 cm, could be identified only in certain portions of the mound. The pottery of the Pd is a dull-red ware, with such types as the pear-shaped jar, jar with a vertical neck and flattened rim, cooking basin with nail-headed rim, bowl with an inturied rim, elongated *kulhar*-like drinking pot with flat base and lid with lamps on the rim.

No structure has been noticed, but kiln-burnt bricks of two sizes, 32×32×10 cm and 45×32×10 cm, have been picked up. Mud bricks of uncertain sizes have also been identified. An unlined soak-well contained typical pottery of the Pd. There were a stone saddle quern [6.19] and a silver punch-marked coin [3.1]. A burnt clay sealing recovered from the previously dug trench reads *Dharakasa* in Brāhmi script of the 3rd-2nd century B.C.

The ceramic types of Pd IV, which was not more than 30 cm thick, are uninspiring but can be identified. Among these are fragments of medieval glazed ware. A wall and floor built with *lakhauri* brick provides structural evidence.

The chronology of the different Pds of Alamgirpur is a matter of opinion. Pd I may be later than the upper levels of ROPAR I C, since quite a few of the Harappa characteristics have by now disappeared, although it is possible that the absence of these characteristics is due to the fact that Alamgirpur was a village while ROPAR was a town. Pd II also denotes a late phase of the PGW,

since several of the objects of this Pd are normally found in the NBPW levels. Among these may be mentioned the bowl with folded rim, reel-shaped discs, bone pendant and an unidentified semicircular grey-ware object. The clay sealing of the 3rd-2nd century B.C. gives the date of Pd III. Pd IV may be dated to the 17th or early 18th century as the site may have possibly acquired its name from Aurangzeb who had the surname of 'Alamgar'.

—Y.D. SHARMA

Alampatti, Dt Madurai. Site with microliths, black-painted red ware and red and black wares, as well as dolmens [4.17.9]. See TANGALACHERI.
IAR 1957-8; 1958-9.

Alampetti, Dt Idukki. Site with 40 megaliths [4.17.10].
IAR 1972-3, p. 14.

Alampur¹, Dt Kangra. Lower Palaeolithic [4.2] site in the Beas valley.

Mohapatra, G.C., 1966, in *Bull. Deccan College Research Inst.*, pp. 221-37.

Alampur², Dt Saharanpur. PGW [11.14] site.
IAR 1965-6.

Alampuram, Dt Dharmapuri. Neolithic [4.6.10] site.
IAR 1970-1.

Alanallur, Dt Palghat. Megalithic [4.17.9] site with multiple hood-stones.
IAR 1968-9.

Alancode, Dt Malapuram. Umbrella stones and urn-burials [4.17.7].
IAR 1970-1.

Alatala, Old, Dt Bhavnagar. Site in the Ghelo valley with Harappa [11.19] coarse corrugated ware, Lustrous Red Ware [11.19] and Chalcolithic black-and-red ware [11.6].
IAR 1960-1, p. 7.

Alathur, Dt Palghat. Megalithic [4.17.10] site.
IAR 1969-70.

Alattur-Mole, Dt Mysore. Megalithic [4.17.8] habitation site.
IAR 1963-4.

Alau (22°15'; 71°30'), Dt Ahmedabad. A settlement equated to Pds II C and III of RANGPUR with the black-and-red ware [11.6.1] and Lustrous Red Ware [11.9] as the chief ceramic industries. There are also scrapers of Chalcolithic character.

AI, 18 & 19, 1962 & 1963, p. 205.

Alduka, Dt Gurgaon. Pre-Harappa [4.8] site.

Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*. Kurukshetra, p. 126.

Aledhar, Dt Bhavnagar. Red Polished Ware [11.23] site in the Shetrunji valley.
IAR 1960-1.

Algwai, Dt Bidar. Megalithic [4.17.8] site.
AR Hyderabad Dept. of Arch. 1937-40, p. 7.

Alijanja, Dt Chanda. Lower Palaeolithic [4.2] site.
IAR 1959-60.

Alia-Bada (22°27'; 70°13'), Dt Jamnagar. Late Harappa [4.10] site corresponding to RANGPUR II B and II C.

AI, 18 & 19, 1962 & 1963, p. 205.

Alipura¹, Dt Jind. See KURUKSHETRA.

Alipura², Dt Saharanpur. Late Harappa [4.10] and OCW [4.12] site.

IAR 1967-8.

Alisandi hill (Alisangi), Dt Raichur. Chalcolithic [4.14.8] site(?), Neolithic [4.6.9] flakes and scrapers.

AR Hyderabad Dept. of Arch. 1935-6, p. 1. Foote, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 123.

Allahabad (25°28'; 81°54'), Dt Allahabad. Several early historical sites have been located in the city: (1) Draupadi-ghat with evidence of extensive habitation with the NBPW [11.16] and several terracotta ring-wells [14.15]; (2) the site on which are now situated Sir Tej Bahadur Sapru Hospital and adjoining bungalows, with the NBPW; (3) Chilla and Govindpur, also with the NBPW; (4) Bharadwaj-asram with remains of the Kushan period; and (5) Dariabad and Mirapur with large quantities of the NBPW and red and grey wares.
IAR 1960-1; 1962-3.

Allahapur (28°52'; 72°25'), Dt Ghaziabad, located near Surana on the left bank of the Hindon, a tributary of the Yamuna. The site was explored by the ASI in 1966 and later on excavated by the National Museum and Delhi Univ. in 1970-71 (*IAR* 1970-1). The 2-8 m occupational deposit was divisible into two cultural Pds, the earlier one subdivided into two.

Sub-pd I A represented by a 1 m thick deposit was characterized mainly by the black-and-red ware [11.6.3], PGW [11.14] and plain black-slipped [11.13] and coarse red wares, in the lower levels the black-and-red ware preponderating over the PGW but the position was reversed in the upper layers. The basic forms in the black-and-red ware are the bowl with vertical sides and sharpened rim or having a grooved carination at the shoulder and the dish with an intumed featureless rim or vertical sides and featureless rim and convex sides forming a sagger base. The black-slipped ware is very restricted in quantity. The associated red-ware types are mainly represented by various jars with splayed-out rims of HASTINĀPURA Pd II type. No structure was encountered, though there were hearths, closed and open-mouthed, successive mud floors with post-holes, patches of ash and traces of burnt reed-impressed mud plaster. The material equipment is augmented by a number of iron, terracotta and bone objects.

In Sub-pd I B all the wares with associated miscellany of the previous Sub-pd continue excepting the black-and-red ware. The associated red ware types of the NBPW [11.16] such as the bowl-cum-lid, basin, deep bowl and jar of HASTINĀPURA Pd III affinity are noticed. The PGW fabric which is ashy to dark-grey in colour continues to remain fine in the technique of manu-

facture and painted designs. Among the new types mention be made of a ring-pedestalled bowl. Finger-marked-burnt bricks of varying sizes ($33 \times 16 \times 5.5$ or $39 \times 19.5 \times 5$ cm) with rice husks as a *dégraissant* were also encountered. Amongst the very few remains of indeterminate structures was a circular mud wall containing some well-preserved hearths, burnt floors, post-holes and burnt bricks. Straight mud walls with a width of about 60 cm were also noticed. Other antiquities include: terracotta objects; beads, ornamented discs; iron objects such as spearhead, arrowheads, blades, etc.; copper nail-parers; stone querns and pestles; bone objects; double-ended and tanged bone point; awls, antimony rods [18.1], etc. A bone point with an iron rod is of particular interest. A terracotta sealing with Brāhmī inscription in late Mauryan characters reads *Bhadra-pālāsa*. More than 90 per cent bone objects are manufactured out of antlers. The presence of a number of unfinished objects indicates that the tools were locally made, a fact which may also show that it was a village of makers of bone tools.¹⁴C dates and the association of iron do not push the antiquity of PGW at this site beyond c. 800 B.C. However, the earliest layers provide an important link with the separate phase of the black-and-red ware noticed at ATRANJIKHERA between the OCW [11.5] on the one hand and the PGW on the other hand. The NBPW at HASTINĀPURA is much later in date than its occurrence in the e. region and as such a time-bracket including phases I A and I B from c. 800 to 300 B.C. of this site is quite reasonable.

Pd II, a flimsy deposit of which was encountered in one of the trenches, was distinguished by a painted red ware assignable to the early centuries of the Christian era.

—K.N. DIKSHIT

Allampadu. See BOGGERU VALLEY.

Allikunta, Dt Kolar. Megalithic [4.17.8] site.
IAR 1971-2.

Allikur, Dt Chingleput. Lower Palaeolithic [4.2] site.

Sewell, R., 1880, *Antiquarian Remains in the Presidency of Madras*, Madras.

Allur¹, Dt Nellore. Middle Palaeolithic site [4.3].

Aiyappan, A., 1942, *Manley Collection of Stone Age Tools*, Mem. ASI, 68, p. 8.

Allur² (Palaiyur), Dt Tiruchchirappalli. Pottery and other remains datable to the early centuries of the Christian era, including the Black-and-red ware [11.15.3] and urn burials [4.17.9].

IAR 1965-6.

Alluru, Dt Krishna. Neolithic [4.6.8] and early historical site.

IAR 1957-8.

Almel, Dt Bijapur. Chalcolithic [4.14.8] site with the typical grey ware of BRAHMAGIRI, a smaller number of

black-painted red ware and microliths of chert, including fluted cores, blades and flakes, as also fragmentary hammerstones and polished stone axes.

IAR 1959-60.

Alonia, Dt Seoni. Tools of Series II (Middle Palaeolithic [4.3]) including scrapers, points borers on chert, tanged and shouldered points, arrowheads, adze- or axe-like tools, burins and thick blades, also a small cordiform tool of fine workmanship.

IAR 1959-60.

Alora, Dt Mahesana. Site with painted red and black-and-red ware.

IAR 1964-5.

Alot, Dt Ujjain. Chalcolithic [4.14.5] site.

IAR 1971-2, p. 31.

Als, Dt Kangra. Terraces of the Sutlej yielded Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1961-2.

Alur¹, Dt Bijapur. Early historical remains.

IAR 1961-2.

Alur², Dt Trichur. Megalithic [4.17.10] site with menhir.

IAR 1967-8.

Alur (T), Dt Belgaum. Lower Palaeolithic [4.2] site.

Joshi, R.V., 1955, *Pleistocene Studies in the Malaprabha Valley*, Pune.

Alvar Tirunagari, Dt Tirunelveli. Megalithic [4.17.9] site.

ASI—AR 1902-3.

Amagōra, Dt Purulia. Middle Stone Age (Middle Palaeolithic [4.3]) tools and microliths.

IAR 1963-4.

Amainagar, Dt Singhbhum. Lower Palaeolithic site. See DHALBHUM.

Amakheda. See 4.6.3.

Amalner, Dt Ahmednagar. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1959-60.

Amaltha, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) tools and Chalcolithic [4.14.6] habitation.

IAR 1961-2.

Amandankaranai, Dt Chingleput. Megalithic [4.17.9] site.

AI, 22, 1966, p. 31.

Amamullahpur (Maharana), Dt Bulandshahr. NBPW [11.16] site.

IAR 1965-6.

Amarambedu, Dt Chingleput. Lower Palaeolithic [4.2] site.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras, p. 149.

Amaravati ($16^{\circ}34'$; $80^{\circ}17'$), Dt Guntur, on the Krishna, 35 km n. of Guntur, famous for its richly embellished Buddhist *stupa*. It lies at the outskirts of the ruins of DHARANIKOTA, ancient Dhānyakataka, of which it

forms part. The *stūpa* area despoiled in the last years of the 18th century has been often haphazardly excavated thereafter, bringing to light an immense sculptural wealth, invaluable for the study of the early art of s.-e. India.

Stone Age artefacts pertaining to the Lower Palaeolithic [4.2] to the Mesolithic [4.5] Ages have often been collected from the neighbourhood (*IAR* 1961-2, p. 1; 1971-2, p. 1). The Neolithic phase [4.6.8] is represented by ground stone axes, chisels, mace-heads and short blades found sparingly in the neighbouring hillock and occasionally in the mixed historical strata. Cairn circles with urn burials [4.17.7] indicate an extensive Megalithic occupation of the area; in fact in 1888-9 A. Rea found a Megalithic urn below a smaller *stūpa* (*ASI—AR* 1908-9, pp. 88-91).

The latest excavation of a mound at the site to the e. and n. of the *stūpa* by the writer in 1974-5 has provided a fairly reliable chronological framework of the early historical phase of the site. Of the five main Pds, Pd I can be subdivided into two phases, A and B, respectively of the 4th and 3rd centuries. Pd I A is characterized by pits dug into the natural reddish *murram*. Huts on posts appear to have existed near the pits, which yielded profuse quantities of the Black-and-red Ware [11.15.2] and NBPW [11.16] on a layer of compact dark-brown earth representing an occupational deposit. A flattish dish fragment in the Black-and-red Ware has a label *thusapāta* inscribed in early Brāhmi characters. Pd I B also yielded fair quantities of the NBPW of all shades—golden, silvery, steel-bluish and black—with the Black-and-red Ware and iron objects. ¹⁴C dates of a similar assemblage at DHARANIKOTA range from 475 ± 100 to 205 ± 100 B.C. A partial railing of granite uprights with Mauryan polish and limestone cross-bars and copings bespeak the beginnings of a *stūpa*, probably in the reign of Aśoka, though its exact nature cannot be made out.

The subsequent Pds of Amaravati—Pd II dated to the 2nd and the 1st centuries B.C., Pd III to the 1st and 2nd centuries A.D., Pd IV to the 3rd to the 6th and Pd V to the beginning of the 7th century and onwards—are a history of the development of the *stūpa* and plastic art and of the Buddhist establishment that grew up around the *stūpa* need not concern us here.

Sarkar, H., & Nayar, S.P., 1972, *Amaravati*, New Delhi. Sarma, I.K., 1974, in *Studies in Indian Epigraphy*, 1, pp. 60-74.—I.K. SARMA

Amargol, Dt Dharwar. Grey ware sherds of BRAHMA-GIRI fabric.

IAR 1966-7.

Amarkantak, Dt Shahdol. Late Stone Age (Mesolithic [4.5]) tools. Middle Palaeolithic [4.3] tools found between Amarkantak and Jabalpur.

IAR 1961-2; 1964-5.

Amarmow, Dt Sagar. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAR 1962-3; 1964-5.

Amarpura, Dt Ganganagar. Impressed grey ware and painted and unpainted sherds of Rang Mahal ware [11.24] together with a shell bangle from Amarapura-2, and PGW and associated wares [11.14] from Amarapura-1. See SARASVATI VALLEY.

Unpublished.

Amarshi, Dt Midnapur. Microlithic flakes and scrapers [4.5] and terracotta mother-goddess [12.6] in archaic style and a set of medieval sculptures.

IAR 1965-6.

Amattiapatti, Amattampatti, Dt Madurai. Urn burials [4.17.9] and Russet-coated Painted Ware [11.22].

IASI 1958-59; 1960-1.

Amauli, Dt Kanpur. Ancient mounds.

IAR 1970-1.

Amaval, Dt Varanasi. Black-and-red Ware [11.6.4].

IAR 1962-3.

Amawa, Dt Banda. Painted rock-shelter [13].

Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad.

Amayeri (Anaiyeri), Dt S. Arcot. Megalithic [4.17.9] site with remains of dolmens.

ASI—AR Madras & Coorg 1903-4, p. 54.

Amba, Dt Bulsar. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAR 1964-5.

Ambadali-Sasan, St Mayurbhanj. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1961-2.

Ambala¹, Dt E. Nimar. Series I (Lower Palaeolithic [4.2]) tools and microliths [4.5].

IAR 1960-1.

Ambala², Dt Mysore. Russet-coated Painted Ware [11.22].

IAR 1960-1.

Ambalavayal-Amsom, Dt Kozhikode. Cists and stone circles [4.7.10].

IAR 1960-1.

Ambapada, Dt Surat. Lower and Middle Palaeolithic and Mesolithic [4.2, 3, 6] site.

IAR 1967-8.

Ambaran, Dt Jammu. Early and Late historical site yielding a large number of terracotta heads and pottery ascribable to the 4th-5th and 8th centuries.

IAR 1961-2; 1962-3.

Ambardi, Dt Rajkot. Red Polished Ware [11.23].

IAR 1957-8.

Ambari (26°11'; 90°45'), Dt Kamrup, situated on the s. bank of the Brahmaputra in the heart of the city of Gauhati, the capital of Assam since ancient times and nerve centre of cultural and religious activities in the Brahmaputra valley since the Epic period under the name Prāgyotīṣa. It also served as a transit port on the trade route between Magadha and China. The site was

accidentally exposed in the course of the digging of the foundation of a modern building and was excavated in 1969-71.

The exposed occupation can be divided into two Pds: Pd I, c. 7th to 12th century, and Pd II, 13th to 17th century, whereafter the site appears to have been deserted. Subsoil water-level prevented deeper excavation, but a test pit showed the existence of earlier cultural deposits. As excavated the site presents a picture of a developed urbanized late historical and medieval culture. Some icons found in the excavation have been stylistically dated to the 8th-9th century. A charcoal sample from the upper level of this deposit gives a ^{14}C date of A.D. 1030 \pm 130. The excavator prefers to put the 7th century as a convenient chronological point of this Pd, as at that time Prāgyotiṣa was at the zenith of its glory. To this Pd belong a large number of structures of bricks of two sizes, 21 \times 21 \times 4 cm and 26 \times 26 \times 6 cm. Other building materials are tiles, clay drain pipes and stone blocks. Some paved drains with cover slabs of stone, a thick boundary wall of brick and a terracotta ring-well also occur. There are Brāhmaṇical sculptures—of Viṣṇu, Sūrya, Durgā, dancing Śiva with ten hands, *lingas* and *yonis* of various sizes, Nandi, Agni, Ganga and Yamunā with a serpent hood and also of sages. The larger ones are of grey sandstone and the smaller ones of fine-grained granite.

The most distinctive type of pottery is made of creamish or buff kaolin, also used for making beads, bangles, and terracotta figurines. Kaolin vessels are mostly of the carinated *lotā* type with an undecorated plain surface. Next to the kaolin ware is the red ware of very fine and well-baked clay. Both the wares are devoid of any wash or slip. The shapes are varied and show a high standard. While wheel-made vessels preponderate some cruder forms with beater-impressed designs are handmade. Besides there is a limited quantity of grey ware without painting, lustrous red ware and dark-grey polished ware. Some dishes of chocolate-slipped ware show concentric rings and rouletted decorations on the rim. Foreign wares such as the Celadon Ware [11.25] and green glazed ware are also present. The principal pottery shapes include: the carinated vessel with a short neck, flaring mouth and narrow base; globular jar; goblet; sharp-rimmed cup; carinated bowl; spouted vessel; flat-rimmed dish; and dish-on-stand. Some vessels are decorated with stamped designs such as rosettes, sun, lozenges, mangoes, etc., on the rim and shoulder. Some dishes of grey ware are decorated with incised lotus design. Two rare types also occur: the inkpot-shaped lid having similarity with the Kushan type of lid, and the horn-shaped vessel having similarity with the Greek cornucopia. As the site is heavily disturbed by pits, wells and constructional foundations in successive

periods, it may be possible that the cultural relics of the earlier and later periods have got mixed up.

The finest terracotta specimens consist of *apsarases* and an exquisitely modelled dancing girl. There are also terracotta miniatures including a *mukha-līṅga* Ganeśa and birds. A clay sealing shows an incised human head wearing a triple-crested crown. A wide range of clay ornaments consisting of beads, bangles and ear ornaments and balls occurs.

An iron arrowhead, some rings of copper and a lump of gold complete the list of metal objects. Some finely-cut and polished and uncut lumps of semiprecious stones (chalcedony and agate not being locally available were imported) have also been found.

Pd II is difficult to reconstruct, as its layers are heavily disturbed. It witnessed the decline of the previous prosperity. No structural remains have been identified. Some of the sculptures may be stylistically dated to this Pd, to which some glazed ware might also belong. A small copper coin of the East India Company is the only find of the Indo-British period. The site appears to have suffered a heavy subsidence due to earthquakes in the 18th-19th century, with which it was deserted.

Choudhury, P.C., 1970, in *Vishweshwaranand Indological Jour.*, 8, pp. 204-7. Dhavalikar, M.K., 1973, in *Bull. Deccan College Res. Inst.*, 31-32, pp. 137-49. Dhavalikar, M.K., & Ansari, Z.D., 1972, in *Jour. Univ. of Poona, Humanities Section* 35, pp. 79-87. IAR 1968-9, pp. 3-4. Sen, S., & Sharma, T.C., 1971, in *Jour. Assam Res. Soc.*, 19, pp. 46-8. —T.C. SHARMA

Ambarishapuram, Dt N. Arcot. Early Stone Age (Lower Palaeolithic [4.2] implements.

IAR 1964-5.

Ambarpur, Dt Bhagalpur. Microliths (of unspecified association).

IAR 1963-4.

Ambeneri, Dt Chanda. Lower Palaeolithic [4.2] site.

IAR 1960-1.

Ambi, Dt Ahmednagar. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1959-60.

Ambikanagar, Dt Bankura. Tools of Series II (Middle Palaeolithic [4.3]), microliths and historical remains.

IAR 1959-60; 1965-6.

Ambkheri (29°44'; 77°46'), Dt Saharanpur, situated half a km n. of Mundlana in Roorkee Tahsil. Excavation by M.N. Deshpande and others on behalf of the ASI in 1963-4 (IAR 1963-4, p. 56) in the flat mound partly cut by rain gullies and the rest under cultivation revealed cultural deposits 1-10 m thick, divisible into six layers, all with the OCW [4.12] with many hitherto unknown shapes. This ware is made of fine, well-levigated clay and is wheel-turned. It is completely or partially grey in section and sand mixed with mica has been used as *dégraissant*, though in the thick pots chopped straw appears to have been used. The pottery is inadequately fired and usually the slip has a tendency to peel off and

whatever slip is found adhering to the surface usually sticks to the clay at the time of extricating the pot from the ground. The sherds do not bear any traces of paintings or incised designs, although cord design, mat impression and horizontally raised bands can be noticed on the exterior of the pots.

The main types comprise the storage jar, trough, dish-on-stand, high-necked jar with horizontally splayed-out rim, basin with undercut beaked rim, footed and ring-based pot, bowl-like lid with central knob and miniature cup with pedestalled base. A washed grey ware in thick, medium and thin fabric is worthy of mention. This ware too is ill-fired as the grey stuff sticks to the hand when it is rubbed. The shapes are only a few in number and consist of the basin, jar and miniature pedestalled cup.

Amongst the structural relics is a hearth (*chulha*) made of ill-fired burnt brick not conforming to any definite size. The entire structure measures 58 cm in length, 30 cm in breadth and 18 cm in height. The intact brick on the s. side measures 33 × 18 × 8 cm. The floor of the e. portion of the structure is lined with brickbats. A limited quantity of ash was noticed within the hearth.

On the s. periphery of the site was noticed a brick kiln, 1.60 m in length and 30 cm in breadth, having its longer side in the e.-w. direction. The kiln was made by cutting of a hollow pit with its sides and bottom plastered with clay mixed with straw, the thickness of sides being 50 to 80 cm. The plastered surface later got burnt when the kiln was in use. A similar kiln with its upper portion completely missing was also noticed near by. From this were recovered a fragmentary terracotta figurine and a cart-wheel with a central hub.

The other antiquities include a solitary carnelian bead and terracotta objects like animal figurines such as the humped bull, beads, oval-shaped cakes with impressions of finger tips and fingers on one of the specimen and an indeterminate circular object. The last one looks like a fragmentary brick with three extant perforations widened at both the surfaces, the difference being that on one side the widening is circular, while on the other side it is elongated. Stone saddle querns [6.19] with pestles have been found.

The OCW from Ambkheri while sharing the fabric of the corresponding pottery from ATRANJIKHERA, BAHADRAD and SAIPAI differs from it in form. On the other hand the assemblage shows certain affinities with the late Harappa [4.10] material of the upper Ganga-Yamuna doab and e. Punjab. All this may indicate only contemporaneity of the two cultures or culture contact and nothing more.

—K.N. DIKSHIT

Amboli, Dt Chanda. Late Stone Age (Mesolithic [4.5], tools.

IAR 1962-3.

Amburapatti, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, Pudukkottai, 1944, pp. 515-8.

Amera, Dt Jabalpur. Conch-shells embedded in conglomerate in association with tools of Series I and II (Lower and Middle Palaeolithic [4.2, 4.3]).

IAR 1958-9.

Amilia, Dt Allahabad. Microlithic site yielding blades, flakes and cores, as also early historical material.

IAR 1962-3; 1966-7.

Amin (29°54'; 76°52'), Dt Karnal. PGW [11.14] sherds from the cleanings of a deep well at the mound.

AI, 10 & 11, 1954 & 1955. Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra.

Amini, Dt Fatehpur. NBPW [11.16] site.

IAR 1968-9.

Aminpura, Dt Tonk. Red Polished Ware [11.23].

IAR 1958-9.

Amirthamangalam, Dt Chingleput, with an immense number of urn burials [4.17] without any apparent lithic appendage, in the lateritic zone of the region. Excavation of a few urns under N.R. Banerjee of the ASI in 1954-5 (IAR 1954-5, p. 20) showed that the handmade coarse and thick urns, oval to roundish in shape and with rolled rims and with or without additional decorations below, had been placed in larger pits cut into the lateritic gravel or even into the lateritic bed-rock [9.6]. Their contents were disarticulated and excarnated bones including the skull, long bones, loosened teeth and rib fragments placed at the bottom and over them were a few Black-and-red Ware [11.15.3] pots and a few iron objects. The urns were then filled up with earth and covered with dome-shaped lids with rolled rims. The pits were thereafter covered up and a few cut pieces of laterite were placed along the edge. The pits were sealed by a layer of loose gravel.

—A. GHOSH

Amjani, Dt Santal Parganas. Lower Palaeolithic [4.2] tools, scrapers of Series II (Mesolithic [4.3]) and microliths.

IAR 1960-1.

Amkhel, Dt Dhule. Late Stone Age (Mesolithic [4.5]) tools.

IAR 1965-6.

Amkhera, Dt Raisen. Early (Lower Palaeolithic [4.2]) and Middle Stone Age (Middle Palaeolithic [4.3]) tools in a stratified deposit.

IAR 1971-2.

Amla, Dt Shajapur. Early Stone Age (Lower Palaeolithic [4.2]) pebble tools on low hills.

IAR 1969-70.

Amlawad Bika, Amlawad Kalan, Dt Ujjain. Chalcolithic [4.14.5] site.

IAR 1971-2.

Amli, Dt Bhilwara. Non-Megalithic black-and-red ware [11.6.2].

IAR 1958-9.

Amlotha, Dt W. Khandesh. Tools of Series II (Middle Palaeolithic [4.3]).

IAR 1958-9.

Ammachattaram, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, Pudukkottai, 1944, pp. 515-8.

Ammambakkam, Dt Chingleput. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2.3] tools.

IAR 1963-4.

Amoda, Dt Dhule. Lower Palaeolithic [4.2], Mesolithic [4.5] and Chalcolithic [4.14.6] site. See KIRVADA.

IAR 1957-8; 1959-60; 1966-7.

Amra (22°26'; 69°56'), Dt Jamnagar. Pd I yielded red and buff wares and bowls of black-and-red ware as in RANGPUR II B. Pd II yielded the Red Polished Ware [11.23] and black-painted red pottery. Pd III is still later in date.

IAR 1955-6. *AI*, 18 & 19, 1962 & 1963, p. 205.

Amrabad, Dt Mahbubnagar. Lower Palaeolithic [4.2] site yielding tools belonging to the Early and Late Acheulian stages.

Gururaja Rao, B.K., 1978, ed., *Decade of Arch. Studies in s. India*, p. 47.

Amrapara, Dt Santal Parganas. Tools of Series III (Mesolithic [4.5]) from the bed of the Bansloi.

IAR 1960-1.

Amrava, Dt Amrava. Series II (Middle Palaeolithic [4.3]) and microlithic [4.5] tools.

IAR 1960-1.

Amreli (21°31'; 71°31'), Dt Amreli, a medieval town with an early historical [4.18.2] site known Gohilwad Timbo (mound of the Gohilwads) situated 2 km w. of Amreli, the earliest epigraphical reference to which is in a copper-plate grant of Dharasena II, the Maitraka ruler of Valabhi, dated A.D. 572, the name mentioned therein being Amrilika. H. Sastri and A.S. Gadre excavated Gohilwad Timbo between 1934 and 1944 (*AR Arch. Dept Baroda State* 1936-7). As a result of the excavation of the author in 1952-3 it has been possible to ascertain the history of the site from the 1st century B.C. to the 8th century A.D., besides a thin occupational deposit of the Chalcolithic culture [4.14] with chalcedony blades and painted pottery. The date of the *de luxe* ceramics of the site, the Red Polished Ware [11.23], which has a wide distribution in India, could be fixed to be between the 1st and the 5th centuries A.D. Among other important results mention may be made of post-cremation burials of the 1st century B.C. Ash and human bones deposited in small funerary vessels were found surrounded by stone cricles often covered with rubble in the form of cairns.

The important finds include silver coins of Kumāragupta, lead and silver coins of W. Kṣatrapa rulers, a goldsmith's die suggesting Gandhāra influence, handles of jars with nude figures, a terracotta plaque showing a bearded Greek holding the horn of plenty and

several stone plaques of gods and goddesses, besides a seal of Śīlāditya.

Rao, S.R., 1965, in *Bull. Baroda Museum & Picture Gallery*, 18. — S.R. RAO

Amroli. See PURNA VALLEY.

Amruhasa river, Dt Purulia. Handaxes, ovates, cleavers and other tools of Acheulian assemblage [4.2] were found in the cliff sections of the stream. On the basis of typology, patination and state of preservation the industry may be divided into earlier and later phases.

IAR 1967-8.

Amsikra, Dt Mayurbhanj. Neolithic [4.6.8] tools.

IAR 1958-9.

Amsom, Dt Kozhkode. Rock-cut cave [4.17.10] with the Black-and-red Ware [11.15.3].

IAR 1964-5.

Amuar, Dt Santal Parganas. Microliths [4.5] on the e. bank of a small river called Chir.

IAR 1961-2.

Amval, Dt Varanasi. Black-and-red Ware [11.6.4] site.

IAR 1962-3.

Anachi, Dt Bijapur. Chalcolithic [4.14.8] habitation site rich in microlithic blades along with fluted cores, the Jorwe Ware [11.11] and grey ware similar to that from BRAHMAGIRI.

IAR 1958-9.

Anagundi, Dt Raichur. Russet-coated Painted Ware [11.22].

AI, 4, 1947-8, p. 310.

Anagwadi (16°15'; 75°40'), Dt Bijapur, 16 km n.-w. of Bagalkot. Lower and Middle Palaeolithic [4.2.2,3] and Mesolithic [4.2.5] tools. See GHATAPRABHA VALLEY.

Progress Rep. Kannada Research Inst. 1941-6, p. 17; 1953-7, p. 24. IAR 1955-6; 1963-4; 1964-5. Pappu, R.S., 1974, *Pleistocene Studies in the upper Krishna Valley*, Pune, pp. 33-5.

Anaikkarappatti, Dt Madurai. Microlithic (Mesolithic [4.5]) site.

IAR 1960-1.

Anandgal, Dt Raichur. Neolithic [4.6.8] site with stone axes, chisels, flakes scrapers and pottery; also Chalcolithic [4.14.8] site.

Foot, R.B., 1961, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 124. *AR Hyderabad Dept of Arch.*, 1935-6, p. 1. *AI*, 4, 1947 & 1948, p. 296.

Anandpur, Dt Gulbarga. Megalithic [4.17.8] site; the largest stone circle is about 33 m in diameter.

Jour. Geological Survey of Hyderabad, 4, 1, p. 157.

Anantapur, Dt Anantapur. Late Stone Age (Mesolithic [4.5]) site.

IAR 1965-6.

Anantavaram, Dt Guntur. Early historical [4.18.10] site.

ASI—AR Madras, 18 June 1892.

Anantavur (Ananthavoor), Dt Malappuram. Megalithic [4.17.10] site with menhirs.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras; IAR 1970-1.

Anavaradanattur, Dt Tirunelveli. Megalithic [4.17.9] site.

ASI—AR 1902-3.

Anaveri, Dt Shimoga. Neolithic [4.6.9] site.

Gazetteer of Karnataka, p. 36.

Andala, Dt Gulbarga. Megalithic [4.17.8] site; some have passages in the cairn stone circles.

Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 58-60.

Andepalli, Dt Anantapur. Neolithic [4.6.8] habitation site and ash mound [14.3]. See AKKAMMAKONDA.

IAR 1965-6.

Andhari, Dt Singbhum. Six shouldered copper celts [4.11] found in a pit.

Patna Museum collection.

Andhari Pahar Chalwa, Dt Palamau. Middle Palaeolithic [4.3] site.

IAR 1970-1.

Andhi, Dt Surat. A number of fluted cores and flakes of the microlithic order besides black-painted red and plain black-and-red wares.

IAR 1961-2.

Andhli, Dt Chanda. The site on the Satti Nullah yielded fluted cores, blades and points [4.5].

IAR 1968-9.

Andos, Dt Aligarh. Early historical site.

IAR 1962-3.

Anek(i) I to VI, Dt Saharanpur. Red ware of Sunga-Kushan assemblage.

IAR 1965-6.

Anegondi, Dt Raichur. Rock-shelter with paintings [13]. Late Stone Age (Mesolithic [4.5]) tools were found 201 m from the rock-shelter. To the w. of Anegondi, near the right bank of the Tungabhadra, a small mound known as Validibha or Valikashtha yielded sherds of the Black-and-red Ware [11.15] with graffiti [20.1] and red-slipped ware and iron slag [16.9.4]. Neolithic [4.6.9] stone axes and early historical material were also found.

AI, 4, 1947-8, p. 296. IAR 1961-2; 1962-3.

Aneguttahalli, Dt Kolar. Megalithic [4.17.8] site with port-holed dolmens.

Indian Antiquity, 10, 1882, pp. 97-100.

Anekal, Dt Bangalore. Russet-coated Painted Ware [11.22].

IAR 1957-8.

Angadi, Dt Palghat. Megalithic site with umbrella stones [4.17.10].

IAR 1968-9.

Angadickal, Dt Quilon. Urn burials [4.17.10].

IAR 1961-2.

Angaikhera, Dt Hardoi. A group of a dozen celts, four harpoons and two antennae swords of the Copper Hoard Culture [4.11].

Jour. Bihar Res. Soc., 51, 1965, pp. 1-7.

Angamangalam, Dt Tirunelveli. Megalithic [4.17.9] site. ASI—AR, 1902-3.

Angandiyur, Dt Palghat. Burial jars of the pyriform type [4.17.10].

IAR 1968-9.

Angia, Dt Kutch. Early Stone Age (Lower Palaeolithic [4.2]) site on the left bank of the Bhuki.

IAR 1967-8.

Anguria, Dt Banas-Kantha. Microliths of Mesolithic affiliation [4.5].

IAR 1964-5.

Anguru, Dt Bellary. Palaeolithic [4.2] site.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Anigara, Dt Ranchi. Burial site situated between the villages of Anigara and Kamuta. Seven flat stone slabs and two sepulchral stone columns were noticed. On the e. of the latter were found two urns, a large earthen jar and a smaller one, both containing pieces of bones, the former containing a copper anklet in addition. Near the second stone column also was found an urn under two or three slabs of stone with pieces of bone in it.

Jour. Bihar & Orissa Res. Soc., 1, 1915, p. 239.

Anjar, Dt Kutch. Middle Palaeolithic and Mesolithic [4.3, 5] site.

IAR 1967-8.

Ankali, Dt Sangli. Tools of the Middle (Middle Palaeolithic [4.3]) and Late Stone (Microlithic [4.5]) Ages.

IAR 1962-3.

Ankola, Dt N. Kanara. Early historical [4.18.11] site.

Janatha Shikshana Samiti, 1976, pp. 8-17. *Karnataka Bharati*, 8, 3, p. 95.

Annakkara, Dt Malappuram. Megalithic [4.17.10] site with menhirs, dolmen and a rock-cut cave.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Annas, Dt Panch Mahals. Mesolithic [4.5] site in the Annas valley.

IAR 1968-9.

Annaseri, Dt Malappuram. Megalithic [4.17.10] site at Kannankaradesham with three menhirs and a stone circle.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Annavasal, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of the Pudukkottai State, Pudukkottai, 1944, pp. 515-8.

Annuppur, Dt Shahdol. Tools of the Early and Middle Stone (Lower [4.2] and Middle Palaeolithic [4.3]) Ages.

IAR 1962-3.

Anser river, Dt Mandsaur. Along the banks of the Anser, a tributary of the Chambal, were found Palaeolithic implements [4.2] comprising handaxes, cleavers, discoids, etc. many of the specimens being rolled.

IAR 1957-8.

Antargaon, Dt Karimnagar. Lower Palaeolithic [4.2] tools found between Antargaon and Manthani.

Gururaja, Rao, B.K., ed., 1978, *Decade of Arch. Studies in s. India*, Dharwar, p. 46.

Antargaugi, Dt Bijapur. Coarse grey ware with ribbon flakes of chert.

IAI 1958-9.

Antichak (Vikramasīlā; 87°16'; 25°19'), Dt Bhagalpur, the remains at which have been identified as the site of the Vikramasīlā-Mahāvihāra founded by the Pāla king Dharmapāla at the beginning of the 9th century and destroyed in the beginning of the 13th. Information about this establishment is found in the Tibetan sources, which mention that it was situated on the bank of the Ganga on a hilly land and was surrounded by a massive boundary wall. In the centre of the monastery there was a shrine adorned with massive figures of Buddha. People from different directions used to come here for advanced studies.

The site was first visited by F. Buchanan in 1811 (Martin, 1838). Oldham suggested that Vikramasīlā should be sought for near Patharghata in Dt Bhagalpur. In recent years B.P. Sinha of the Patna University started excavation of the highest mound of Antichak in the year 1960 and continued it till 1969 (IAI 1960-1, p. 3; 1961-2, p. 3; 1962-3, p. 3; 1963-4, p. 5; 1964-5, p. 5; 1965-6, p. 6; 1966-7, p. 6; 1968-9, p. 4) and established its identity with Vikramasīlā. With his limited resources he could partially expose the central *caitya* only. Cruciform on plan, the height of the *caitya* from the surface level is about 15 m and the breadth about 100 m. This structure is made of brick with chambers and antechambers in all its sides along with two circumambulatory paths, both running around it, the upper one at a height of about 2 m from the lower. Like the Somapura-Mahāvihāra (Paharpur in Bangladesh) its wall is decorated with terracotta plaques.

Since 1972 the ASI has taken over the excavation of the site (IAI 1972-3, p. 3). The current excavation has exposed a huge 330 m square monastery which consists of a series of monastic cells numbering about 208 excluding the rectangular structures flanking the n. gate and the circular and rectangular projections around the outer wall. The cell open into a common veranda supported on an inner wall 1.75 m in thickness. The roof of the main gateway was supported on tall monolithic pillars 7.8 m high. Beyond 70 m towards the e. from the n. gate a postern gate has been discovered; another narrow passage has also been found in the s. wing of the monastery. The main drainage lies in the n.-e. corner. A few basement chambers have also been located.

There are three phases of structural activities, the period covered being between the early 9th century and the early 13th, when a violent destruction robbed the establishment of its grandeur. This can be seen in the remains of fallen and broken pillars disjointed from their

bases and extensive deposits of ashy layers.

The remains can be compared with those of the Somapura-Mahāvihāra. On plan both are very much alike except that Vikramasīlā is larger and has projections attached with its outer wall. There is also great resemblance in the antiquities discovered at both the sites.

The antiquities of Vikramasīlā comprise terracotta objects including a large number of plaques representing Buddhist and Brāhmanical deities, animal and bird figurines and some symbolic representations, as also a large number of stone images of gods and goddesses. A few small bronzes of Buddhist deities like Buddha, Maitreya, Vajrapāṇi, Avalokiteśvara and Mañjuśrī have been found. The bulk of antiquities comprises stone, iron, copper, silver and bronze objects, including a few silver and copper coins. The pottery includes the vase, carinated *handi*, bowl, shallow dish and miniature pot in a fairly good number both in red and grey wares.

Martin, M., 1838, *History, Antiquities, Topography & Statistics of Eastern India*, I, London. C.E.A.W. Oldham, ed., 1930, *Jour. of Francis Buchanan kept during the Survey of the Dt of Bhagalpur in 1810-11*, Patna.—B.S. VERMA

Anturli, Dt Dhule. Microliths and sometimes neoliths were found in association with the black-on-red painted pottery and coarse grey ware, similar to that from the Chalcolithic [4.14.8] levels at BRAHMAGIRI and BAHAL. The site also contained remains of burials together with Black-and-red Ware bearing graffiti. The Chalcolithic culture was superimposed successively by cultures with the typical Black-and-red Ware and a coarse red-slipped ware, the latter being assignable to the Satāvahana period.

IAI 1957-8.

Anumulapalle, Dt Kumool. Megalithic [4.17.7] site with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Anupgarh Tibba, Dt Ganganagar. A large number of chert rejects, but no finished microliths [4.5]; painted sherds of Rang Mahal Ware [11.24].

Unpublished.

Anur, Dt Dharwar. Early historical [4.18.11] site. See HANDIGNUR.

IAI 1958-9.

Anveri, Dt Dharwar. Early historical [4.18.11] site with the characteristic Russet-coated Painted Ware [11.22], Black-and-red Ware [11.15.3] and a dull-red ware.

IAI 1959-60.

Anwarpur Baraoli, Dt Sharanpur. OCW [11.5] site also with Śūṅga-Kushan and medieval pottery.

IAI 1964-5; 1969-70.

Aong, Dt Mainpuri. PGW [11.14] and NBPW [11.16] site.

IAI 1961-2.

Apegaon (19°25'; 75°25'), Dt Aurangabad, a small village on the left bank of the Godavari, in Taluk Paithan, with considerable sanctity attached to it as the birthplace of Jñāneśvara, the great saint of the 13th century. The ancient site is located about 2 km e. of the village on the confluence of the Godavari and the Virabhadra, the spot being known as Ramatirtha where Rāma is said to have rested during his exile. The site is considerably disturbed by cultivation, only a small part comprising an area about 2 hectares now remaining.

The site was discovered in 1975 by R.V. Joshi of the Deccan College and was excavated in 1976 by S.B. Deo, also of that institution. The small-scale excavation revealed a twofold sequence of cultures, viz. Chalcolithic [4.14.6] and early historical [4.18.8]. Pd I is characterized by a unique painted pottery which has been named as the 'Ramatirtha ware'. It is made of a pinkish paste and has a dark-brown slip crackled at places. The ware is slightly coarse in fabric but is wheel-made. The range of forms is limited, the commonest being the deep bowl with an outcurved rim. Besides there is the globular jar rarely provided with a spout. Also rare is the dish which may in fact be the dish-on-stand. The painted patterns are in red and are mostly linear. Some vessels have turned red because of oxidization. Associated with this is a coarse handmade red/grey ware and the storage jar. A microlithic blade-flake industry [4.14.6] of chalcidony is also present.

Pd I can be dated to c. 1600-1300 B.C. on the basis of three ¹⁴C dates, supported by the occurrence of the Malwa Ware [11.10] in its lower and the Jorwe Ware [11.11] in its upper levels. The site was deserted probably because of floods as is suggested by large quantities of microshells recovered by floatation. It was again re-occupied in the early historical period, Pd II, c. 2nd century B.C. to 2nd century A.D. but the habitation has been completely destroyed by modern pits dug on the site by villagers.

—M.K. DHAVALIKAR.

Appankoil, Dt Tirunelveli. Megalithic [4.17.9] site.

ASI—AR 1902-3.

Appareddipalli, Dt Medak. Tools of Series II (Middle Palaeolithic [4.3]) and a few microliths [4.5].

IAR 1958-9.

Appukkallu, Dt N. Arcot. Excavation of an extensive ash mound [14.3] at Appukkallu near Vellore yielded Neolithic [4.6.10] cultural traits like the polished celts and vestiges of Iron Age occupation. The Megalithic [4.17.9] levels gave a ¹⁴C dating of 300 B.C.

Gururaja Rao, B.K., ed. 1978, *Decade of Arch. Studies in s. India*, Dharwar, p. 3.

Apra, Dt Jullundur. PGW [11.14] and Black-and Red Wares.

IAR 1963-4.

Ara. See 4.14.4.

Arabikere, Dt Mysore. Megalithic cist burials [4.17.8].

IAR 1961-2.

Aradgan, Dt Ahmednagar. Microliths [4.5].

IAR 1958-9.

Arahalli, Dt Raichur. Two Neolithic [4.6.9], two Chalcolithic [4.14.8] and one Megalithic burial-cum-habitation [4.17.8] sites were located.

IAR 1972-3. *Karnataka Bharati*, 6, 1, pp. 64-75.

Arahri, Dt Sehore. Early Stone Age (Lower Palaeolithic [4.2]) factory site.

IAR 1971-2.

Arakalyadi, Dt Mysore. Megalithic site with stone circles [4.17.8].

IAR 1955-6.

Arakkasanahalli, Dt Dharmapuri. Megalithic [4.17.9] burial site.

IAR 1969-70.

Arali, Dt Goa. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1964-5.

Arambakkam, Dt Chingleput. Early (Lower Palaeolithic [4.2]) and Late Stone Age (Mesolithic [4.5]) site.

IAR 1964-5.

Arandya, Dt Indore. Black-and-red ware.

IAR 1958-9.

Araon-Jagdish, Dt Gorakhpur. NBPW [11.16].

IAR 1963-4.

Arasapur, Dt Tiruchchirappalli. Russet-coated Painted Ware [11.22].

IAR 1963-4.

Arasamalai, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of the Pudukkottai State, Pudukkottai, 1944, pp. 575-18.

Arasankuppam, Dt S. Arcot. At Arasankuppam and at the neighbouring village of Nattaveli sherds of a non-descript red and thick black wares and a piece of Arretine Ware [11.20] were found.

IAR 1965-6.

Arashangodi, Dt Dharwar. Neolithic [4.6.9] site.

IAR 1968-9.

Arasonal, Dt Bijapur. Microliths [4.5].

IAR 1961-2.

Aravandlappalle (i), Dt Chittoor. Early (Lower Palaeolithic [4.2]) and Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1962-3; 1963-4.

Araveetikota, Dt Kumool. Early (Lower Palaeolithic [4.2]) and Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1964-5.

Arbay, Dt Mathura. Ancient mounds.

IAR 1970-1.

Archalli, Dt Shimoga. Megalithic site with chamber tombs.

Jour. Karnataka Univ., 10, p. 7.

Ardi, Dt Ujjain. Middle Palaeolithic [4.3] site.

IAR 1971-2.

Arditara, Dt Dhule. Lower Palaeolithic [4.2] and Upper

Palaeolithic [4.4] site.

IAR 1959-60.

Ardoi (22°05'; 70°47'), Dt Rajkot. Transitional phase of Harappa culture [4.9] corresponding to RANGPUR II C. Also early historical site.

At 18 & 19, 1962 & 1963, p. 205 IAR 1957-8; 1958-9.

Arena, Dt Junagadh. Red Polished Ware [11.23] site.

IAR 1954-5.

Argan-Manga, Dt Amritsar. Black-slipped Ware [11.13] and black-and-red and grey wares.

IAR 1963-4.

Arhal, Dt Raichur. Chalcolithic [4.14.8] site.

Karnataka Bhurati, 6, 1, pp. 64-75.

Arhat Tondi, Dt Chanda. The site on the Satti Nullah yielded blades, lunates and points.

IAR 1968-9.

Arikamedu (11°55'; 79°50'). Dt Pondicherry, 3 km s. of Pondicherry, situated on the bank of a river formed into a lagoon barred by a sand-bar from the Bay of Bengal, 500 m to the n. the fishermen's village Virampattinam, which is considered to be identical with Virai of ancient Tamil literature (Champakalakshmi, 1975-6). From its location and proximity to Pondicherry it has been identified with the port of Podouke of the *Periplus of the Erythraean Sea* and Ptolemy. In 1937 and after Jouveau-Dubreuil collected from here some beads and gems, one of them with the head of Augustus in intaglio, and thought that Arikamedu was a veritable Roman town (Jouveau-Dubreuil, 1941). Later on some interested French residents of Pondicherry carried out random excavations at the site, exposed, a well and ring-well [14.15] and collected antiquities, some of which were recognised to be distinctly Roman by Wheeler during his visit to Pondicherry in 1944. Justifiably thinking that the more precise chronology of Roman antiquities would help in the dating of the till then imperfectly dated s. Indian antiquities and would provide a datum line for the latter, Wheeler excavated the site in 1945 with his assistants on behalf of the ASI (Wheeler, 1946).

The site was found badly disturbed by robbing and levelling down for rice and coconut plantation. However in the s. sector remains of an oblong building identified as a warehouse, over 45 m in length, with a single partition wall and a side chamber towards the e., was exposed. Its brickwork was externally rendered watertight by a tough lime plaster. In the n. sector the structural activity could be divided into three phases, the first two with three Sub-pds, the habitation being continuous. To Sub-pd 2 of the early phase belonged two tanks, repaired and restored several times till the end of Phase 2. The extensive use of drains or conduits and substantial pavements and the absence of domestic features justify their identification as cisterns or vats for dyeing muslin. No other noteworthy structure was found.

The site had been under occupation before the intro-

duction of the Arretine Ware [11.20] in c. A.D. 25, i.e. towards the end of the 1st century B.C. or beginning of the 1st century A.D. Most of the structures post-date the Arretine Ware; a terminal date of A.D. 200 would be a reasonable guess. Throughout its existence the character of the settlement, viz. of an Indo-Roman trading station, remained unaltered.

Three categories of imported Roman ware add precision to the chronology:

(i) Arretine Ware [11.20] belonging to the class of ware known as *terra sigillata* ('stamped pottery'), a red-glazed ware originating in the e. Mediterranean region, but the ware as represented at Arikamedu belongs to the highest category of metropolitan *sigillata* produced in Italy, at Arezzo (whence the name Arretine) and elsewhere, originating in the 1st century B.C. and driven out of the w. market by A.D. 50. The sherds, 29 in number, generally represent footed dish and cup. Three of them bear stamps, respectively VIBII (or VIBIE or VIBIF), CAMVRI and ITTA on the base.

(ii) Amphorae [11.19], high-necked handled jars, used in the Roman world as containers of wine or oil, found in fragments in all strata. In many of them there is an internal incrustation identified as resin, a common constituent of Mediterranean wines.

(iii) Rouletted Ware [11.21], a dish with an incurved and beaked rim which has a faceted edge. The flat inner base has two or three concentric bands of rouletted pattern. The body is usually black-to-grey in colour. There is nothing foreign in the shape or fabric but the practice of decorating the base with a rouletted design may be foreign. The Rouletted Ware has now been found to have had a wide distribution in India.

To complete the list of imported objects from Arikamedu, mention may be made of the Chinese Celadon Ware [11.25], which can be occasionally picked up from the surface, a Graeco-Roman gem with the head of Augustus in intaglio found in the previous French diggings, a Roman lamp of fine red ware and fragment of a pillar-moulded bowl of whitish iridescent glass and of a bowl of blue glass with horizontally ribbed sides.

The local pottery is usually grey and represents various shapes; it has little in common with the Megalithic pottery [11.15.3]. A particular type is characteristic: it represents a special form of cup or small bowl of grey, greyish pink or black-and-red ware or fine fabric with a black slip inside and pink outside. Flat-based and with tapering profile, it is ornamented on the interior of the sides with a row of stamped medallions representing fish or birds, between bands of multiple incised grooves, with a further band of concentric grooves on the inside of the base. A large number of pots bear inscriptions in graffito in early Tamil.

While terracotta figurines are rare, beads of the usual types and material, including three gold ones, are profuse in number. Metal objects include iron nails and a copper rattle. An ivory handle, a wooden toy boat—a roughly fashioned block of wood with its central portion scooped out—the leg of a cot and a mallet and pieces of rope are the other worth-mentioning finds.

As stated above, the site has been dated, mainly on the ground of the position of the Arretine Ware, from the end of the 1st century B.C. to A.D. 200. The beginning may coincide with the consolidation of Roman trade with the e. world at the time of Augustus (23 B.C. to A.D. 14).

Champakalakshmi, 1975-6, in *Purātattva*, 8 p. 117. Jouveau-Dubreuil, G., 1941, in *Bull. de l'Ecole Française d'Extrême Orient*, 40, p. 450. Wheeler, R.E.M., Ghosh, A., & Krishna Deva, 1946, *AI*, 2, pp. 17-124.—A. GHOSH

Arindilam, Dt Mallappuram. Megalithic [4.17.10] site with dolmens and menhirs.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Aring, Dt Mathura. The site 7 km to the e. of Govardhan on the Govardhan-Mathura road produced sherds of PGW [11.14] and NBPW [11.16].

IAR 1955-6.

Ariyannur, Dt Trichur. See 4.17.10.

Ariyur¹, Dt N. Arcot. Port-holed cists [4.17.9].

AI, 4, 1947-8, p. 306.

Ariyur², Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, Pudukkottai, 1944, p. 515-8.

Ariyur Gudalur, Dt Tirunelveli. Prehistoric site.

ASI—AR 1936-7. Cammiade, L.A.; *Gazetteer of Tinnevely Dt*, p. 409.

Aransar-no-Ghod, Dt Banas Kantha. Medieval glazed, grey ware and coarse red wares.

IAR 1964-5.

Arjunapur-Lauria, Dt Mirzapur. Cairn circles and dolmenoid cists [4.17.3].

IAR 1962-3.

Arjuni, Dt Durg. Neolithic [4.6] remains and pottery of the early Christian era.

IAR 1972-3. *Madhya Pradesh Ki Ruparekha*, p. 39.

Arjunwad, Dt Kolhapur. Tools of the Middle (Middle Palaeolithic [4.3]) and Late Stone (Mesolithic [4.5]) Age.

IAR 1962-3.

Arkapalli¹, Dt Chanda. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1961-2.

Arkapalli², Dt Mahbubnagar. Megalithic [4.17.7] site.

Sreenivasachar, P., 1963, in *Arch. Bull.*, 11, p. 3.

Arkonam, Dt N. Arcot. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAR 1964-5.

Arla, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1961-2.

Arnai, Dt Kurukshetra. PGW [11.14] site.

IAR 1960-1.

Arnai, Dt Raichur. Neolithic [4.6.9] site.

IAR 1970-1.

Arnauli, Dt Rupnagar. Harappa [4.9], late Harappa [4.10] and PGW [4.15] site.

IAR 1962-3; 1964-5.

Arni, Dt Yavatmal. Megalithic site. See 4.17.6.

Arniawali, Dt Hissar. Early historical site.

Silak Ram, 1972, unpublished thesis, Kurukshetra Univ.

Arnipatti, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of the Pudukkottai State, Pudukkottai, 1944, pp. 515-8.

Arrah, Dt Burdwan. Microliths [4.5].

IAR 1960-1, p. 67.

Arumbhavimalai, Dt N. Arcot. Early historical site also yielding Megalithic Black-and-red Ware [11.15.3].

IAR 1970-1.

Asakada, Dt Junagadh. Red Polished Ware [11.23].

IAR 1957-8.

Asalana, Dt Sagar. Lower [4.2] and Middle Palaeolithic [4.3] site on the Sonar river.

IAR 1958-9. *AI*, 17, 1961, pp. 5-36.

Asan, Dt Rohtak. Late Harappa [4.10] and early historical site.

Jour. Haryana Studies, 3, 1, p. 4.

Asana, Dt Dhule. Microliths [4.5].

IAR 1961-2.

Asandh, Dt Kurukshetra. PGW [11.14] site.

AI, 10 and 11, 1954 and 1955, p. 138. *IAR* 1960-1.

Asangi, Dt Bijapur. Lower Palaeolithic [4.2], Chalcolithic [4.14.8] and Megalithic [4.17.8] site.

IAR 1963-4; 1965-6, Pappu, R.S., 1974, *Pleistocene Studies in the Upper Krishna Basin*, Pune, p. 32.

Asanwali, Dt Saharanpur. Harappa [4.9] and OCW [4.12] site.

IAR 1966-7.

Asara, Dt Meerut. PGW [11.14] and NBPW [11.16] sites on the right bank of the Hindon.

Sharma, R.P., 1976, in *Arch. Congress & Seminar Papers*, 1972, Kurukshetra.

Asaunji, Dt Gorakhpur. Black-and-red Ware [11.6].

IAR 1963-4.

Asawala, Dt Saharanpur. PGW [4.15] site.

IAR 1967-8.

Asawar, Dt Bulandshahr. PGW [11.14] and plain grey ware.

IAR 1959-60.

Ashaur, Dt Jullundur. PGW [11.14] and black-and-red [11.6] wares.

IAR 1963-4. Suraj Bhan, 1975, *Excavations at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 122.

Ashipatti, Dt Coimbatore. Megalithic site with dolmens [4.17.9].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Ashoka Nagar, Dt Shimoga. Neolithic [4.6.9] implements recovered.

Gazetteer of India. Karnataka, p. 36. *IAR* 1972-3, p. 27.

Ashrava, Dt Dhule. Chalcolithic [4.14.6] site on the Tapti. See UDDHAMGADH.

IAR 1958-9.

Ashta¹, Dt Dhule. Series II tools (Middle Palaeolithic [4.3]) and microliths [4.5].

IAR 1959-60; 1966-7.

Ashta², Dt Shere. Lower Palaeolithic [4.2] site on the Parvati river; Kayatha ware [11.7] and remains of the Chalcolithic culture also occur. The typical black-on-red painted pottery was found associated with black-and-red ware and microliths, besides remains of later historical times ranging down to the period of the Marathas.

IAR 1956-7; 1957-8. Wakankar, V.S., 1976, in *Arch. Congress & Seminar*, 1972, Kurukshetra.

Ashtana, Dt Dhule. Microliths [4.5].

IAR 1961-2.

Ashte, Dt Belgaum. Megalithic dolmens [4.17.8].

IAR 1963-4.

Asifabad, Dt Adilabad. Middle Stone Age (Middle Palaeolithic [4.3]) implements.

IAR 1964-5.

Aslana, Dt Dhule. Tools of Series II (Middle Palaeolithic [4.3]) on the Sonar river.

IAR 1958-9.

Asmanpurdish, Dt Deoria. NBPW [11.16] site.

IAR 1962-3.

Asohna, Dt Bhind. Black-and-red ware [11.6] and NBPW [11.16].

IAR 1959-60.

Asoti, Dt Dharwar. Lower Palaeolithic [4.2] site.

Joshi, R.V., 1955, *Pleistocene Studies in the Malaprabha Basin*, Poona, fig. 5.

Astagaon, Dt Ahmednagar. Tools of Series II (Middle Palaeolithic [4.3] and microliths [4.5]. Sherds of thick grey ware were picked up as also characteristic early historical pottery such as black-and-red and red wares.

IAR 1960-1.

Astajuri, Dt Midnapur. Microliths [4.5] and flakes.

IAR 1961-2.

Astapara, Dt Midnapur. Site yielding blade industries [4.4?].

IAR 1965-6, p. 58.

Asthal Bohar (Khokhrakot), Dt Rohtak. Early historical site.

Jour. Haryana Studies, 3, 1, p. 4.

Astipur, Dt Kurukshetra. PGW [11.14] site.

IAR 1964-5.

Asundi, Dt Dharwar. Chalcolithic [4.4] grey ware was found. Stone circles with the typical Black-and-red Ware [11.15.3] also occurred.

IAR 1959-60.

Asurgad, Dt Phulbani. Early historical [4.18.8] fortified site near the confluence of the Tel and the Mahanadi.

IAR 1968-9.

Asurgarh, Dt. Kalahandi. Approachable from Rupra Road station on the Vizianagram-Raipur line. Asurgarh contains the remains of an impressive fort (approx-

mately 300 × 200 m) surviving to a height of nearly 9 m above the surrounding ground. Oblong on plan, the fort has an opening for a gateway on each of the four sides. The visible portion of the fortification wall is made of earth and *kankar*. However in the section of the openings for gateways there are remnants of brickwork. The fort is surrounded by a moat on three sides and the streamlet Sandul on the fourth. The surface finds include a neolithic celt, microlithic cores and flakes and beads of semiprecious stones. Trial-diggings carried out by the Sambalpur University within the fort revealed a circular brick structure ascribed to the 5th-6th century A.D. The earliest level of the 3-m thick cultural deposit encountered in the trenches yielded the black-slipped and polished pottery and the next upper level the black-and-red ware. The topmost stratum contains sherds of red ware of early medieval times. Noteworthy among the other antiquities are silver punch-marked coins, copper Puri-Kushan coins, terracotta figurines and beads of semiprecious stones.

—D. MITRA.

Ata, Dt Gurgaon. Early historical [4.18.1] site.

Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.

Atavanad, Dt Malappuram. Megalithic [4.17.10] site with menhirs and rock-cut caves.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Atghara, Dt 24-Parganas. Terracottas, Rouletted Ware [1.21] and grey sherds and cast copper coins [3.1].

IAR 1957-8.

Atharga, Dt Bijapur. Sherds of Red Polished Ware [11.23].

IAR 1957-8.

Athirampuzha, Dt Kottayam. Menhirs and cairn circles [4.17.10].

IAR 1963-4.

Athola, Dt Dadra and Nagar Haveli. Early and Middle Stone (Lower and Middle Palaeolithic [4.2.3] Age and Megalithic site on the Daman-Ganga.

IAR 1965-6.

Atkot, Dt Rajkot. Early Stone Age (Lower Palaeolithic [4.2] site in the Bhadar valley yielding handaxes, scrapers, flakes, etc.

IAR 1956-7; 1969-70.

Atmi, Dt Shahabad. Excavation exposed remains of a *stupa* exactly like many at Sarnath.

ASI—AR, E. Circle, 1906-7, p. 17.

Atranjikhhera (27°42'; 78°44'), Dt Etah, on the right bank of the Kali Nadi, a tributary of the Ganga, probably visited by Buddha when it was known as Vairanjan (this is doubtful as Vairanjan of the Pali literature seems to have been located much farther e., Law, 1932, p. 4) and by Hiuen Tsang who calls it Pi-lo-san-na (Beal, p. 201). [To the Jains it was known as Antarañji, Jain, 1947, p. 267.] It was a *pargana* headquarters of the Kanauj *sarkar* in

Akbar's time. The site was excavated by the author on behalf of the Aligarh Muslim Univ. during 1962-3 and subsequent years (*IAR* 1962-3, p. 34; 1963-4, p. 47). The site reveals a unique continuity of occupation beginning with the early part of the 2nd millennium B.C. down to medieval times, the Pds diagnostically represented by the OCW [4.12], black-and-red ware [11.63], PGW [11.14], NBPW [11.16], red ware of the Kushan and post-Kushan times and medieval glazed ware. While the OCW and PGW periods were known from excavations elsewhere, a distinct intervening black-and-red ware period has come to light here [as at NOH].

Pd I (OCW, 1st half of the 2nd millennium B.C.). The thickness of the deposit ranges from 80 cm to 1.5 m the average being 1 m. The OCW sherds are wheel-turned and are so fragile that powder comes off even with slight rubbing. Most of the sherds are thick and their edges rolled. In this respect this pottery is similar to that found at BAHADRAD, AMBKHERI, HASTINĀPURA SAIPAI, etc. The common shapes are the bowl, vase, knobbed lid, dish-on-stand, handle, etc. A large number reveal a thick slip, some having the traces of painting in black pigment. The decorations mainly comprise incised designs such as triangular notches, parallel lines, wavy lines, rectangular lines forming check pattern, etc. Decorations of such a variety have not been noticed in the OCW of other sites except LAL QILA. The culture is believed to have been destroyed by a great deluge (Lal, 1968, pp. 857-63). The plant remains have proved that the people grew two cereals in a year—rice in summer and barley in winter. This perhaps provides one of the earliest evidences of rice cultivation in India [2.2]. They also grew pulses and used *chir* wood brought from the Himalayan tract [2.9]. Among other familiar woods are the *babul*, *sissoo* and *sal*. The presence of bones with sharp cut marks suggest that the people supplemented their cereal diet with meat. They domesticated animals particularly the cow (*Bos indicus*). Among the other finds of the Pd are sandstone and quartzite objects including querns and pestles [6.19], a terracotta bead, a sling ball (?), potter's dabber [16.11] and two pottery discs [6.7.3].

Though no structure has been found the people knew the use of brick. However their houses were generally made of wattle and daub as is evident from the find of a large number of mud plaster pieces bearing marks of reeds, etc. On the basis of the SAIPAI evidence it is now known that they are the authors of the Copper Hoard industry [4.11], though no Copper Hoards have found here.

The thermoluminescence [5.6] dating of a few sherds from the site determined by the Arch. Res. Laboratory of Oxford puts them in the early part of the 2nd millennium B.C. with a mean date of 1690 B.C.

Pd II (black-and-red ware, 1450-1200 B.C.). The deposits of this Pd characterized by the black-and-red ware and copper are sandwiched between the layers of the OCW and PGW. In spite of the fact that they are not more than 50 cm thick some distinct signs of regular habitation could be observed including three domestic hearths, one of which may have been a sacrificial pit.

The pottery complex comprises the black-and-red, black-slipped [11.13], greyish, red-slipped as well as unslipped wares, the first two being of fine quality. Some pots have a lustre of high quality due to burnishing. The common shapes are the bowl and dish. Handmade pots have also been found.

The cultural equipment mainly includes objects of copper and semiprecious stones. We may infer on the basis of the entire complex that the Pd represents the settlement in the upper Ganga valley of a people whose culture had an affinity with the Chalcolithic cultures of the upper Deccan [4.146] on one hand and of the Banas [4.14.1] on the other. (But the absence of stone tools precludes the classification of the culture as chalcolithic.) The semiprecious stones could have been brought from the Ranthambor region in Rajasthan. Since the nearest source of copper is also not far from that region it is likely that both copper and these stones were brought from the neighbourhood of Ranthambor.

The people of the Pd domesticated animals and cultivated rice and barley [2.2]. They were familiar with teakwood which they procured from the region beyond the Satpura range [2.9].

Pd III (PGW, 1200-600 B.C.). A richer deposit is of the PGW. Although the Ware has been excavated at several sites, Atranjikhhera has its own significance in many respects. On the basis of the ¹⁴C dating of 1025 ± 110 B.C. (calibrated date of 1030 = 1160-80, Ralph et al., 1973, p. 11) relating to the mid-phase of the culture, it may be inferred that the authors of this culture settled down here in around 1200 B.C.

The most significant discovery is that of iron tools and implements. They have been found in practically all the layers suggesting that the use of iron was common throughout the Pd. Among the iron objects are spearheads, arrowheads, knives, chisels, hooks, an axe, a pair of tongs, etc. A number of other indeterminate iron objects along with lumps of slag have also been found. These finds and remains of iron furnaces indicate that iron industry was fully developed at the site including the process of forging and smelting. Among other objects of the Pd are copper ones such as pieces of rings, bangles, hooks, rods and chisels, and bone ones including styluses, awls, knitting needles (?) arrowheads, etc., and several terracotta objects including animal figurines like the bull and pig. Terracotta discs have been found in abundance; they bear incised decorations depicting

symbols of sun, moon, star, fire-altar, chariot, arrow-heads etc.

The total complex indicates that the people of the PGW culture at the site had developed iron technology from the very beginning. They were also able to mine iron ore in a considerable quantity which enabled them to produce iron tools and implements in abundance. They were thus able to clear the land of tropical vegetation and bring it under extensive cultivation and started cultivating wheat in addition to rice, barley and pulses. They also engaged in trade without which they could not have acquired so much metal or beads of semiprecious stones. These observations thus further strengthen the view that the Pd represents the culture of the Aryans at least of the later Vedic period.

Pd IV (NBPW, 600-50 B.C.). With Pd IV we enter the historical epoch. Its first phase is associated with the age of the sixteen *mahā-janapadas* and the ultimate rise of Magadha and the second phase with the Maurya and the Śuṅga ages. Though many new features begin to appear in the lower phase, the material culture more or less remains the same as in the preceding Pd. However the use of baked brick becomes more frequent and agricultural tools of iron like the sickle, weeder, hoe, spud and ploughshare are seen for the first time. Unlined wells were dug perhaps to irrigate the fields.

The upper phase is marked by a rapid growth of urban life as the structural activity including defences, a granary and an apsidal temple starts on a large scale. Other features include the development of terracotta art including human and animal figurines, coinage [3.1], seals [3.2], and use of iron and copper on an extensive scale. Among the important objects worth mentioning are an excellent tiny bird of bone, a printing block of terracotta bearing a beautiful design on either side and a pair of frogs made of copper.

Rice, wheat and barley were produced on an extensive scale. The recovery of a new pulse, *urd*, is of significance as it marks an advancement over gram and *khesari*.

Pds V to VII (c 50 B.C.-A.D. 1600). A limited area belonging to the post-NBPW has been excavated, though extensive excavation has now been started. Pd V is characterized by the absence of the grey ware, NBPW and black-slipped ware and is represented exclusively by a red-ware industry. While most of the shapes and other features of the red ware seen in Pd IV continue, many new shapes in pots and pans are introduced, the typical of them being the elongated carinated vase bearing fine slip, bottle, inkpot-like lid, etc. The houses are better planned and larger in size. An interesting house complex of burnt brick along with several floor levels and covered drains belonging to the early phase had been unearthed. Beautiful terracotta human and animal

figures, beads, copper objects, coins of the Kushan kings and iron tools are other interesting finds of the Pd.

It appears that during Pd VI the settlement was not flourishing. However terracotta figurines and a few sculptures, including a Jaina *tirthankara*, represent the Gupta and later art tradition. Among other finds are coins, seals and objects of iron, copper, stone and bone.

The most interesting feature of the pre-Mughal age is the advent of the bowl and dish of glazed ware decorated with painted floral motifs.

Beal, S., 1983, *Buddhist Records of the W. World*, 2 vols., New Delhi.
Gaur, R.C. 1969, in Sinha, B.P. ed., *Potteries in Ancient India*, Patna, pp. 95-101; 1970-1, in *Purātattva*, 4, pp. 42-50; 1970-1, in *ibid.*, pp. 5 10-12 Jain, J.C., 1947, *Life in Ancient India as Depicted in Jain Canons*, Bombay. Lal, B.B., 1968, in *American Anthropologist*, 170. Law, B.C., 1932, *Geography of Early Buddhism*, London. Ralph, E.K., Michael, H.N., & Han, M.C., 1973, in *MASCA Newsletter*, August.—R.C. GAUR

Atrava, Dt Meerut. PGW [11.18] and red ware of the Śuṅga-Kushan period.

IAR 1966.7.

Attantangal, Dt Chingleput. Megalithic [4.17.9] site.

AI, 22, 1964, p. 27.

Attapady, Dt Palghat. Megalithic [4.17.10.] site with menhirs.

IAR 1968.9.

Attawa, Dt Kanpur. NBPW [11.16].

IAR 1965.6.

Attirambakkam, **Attirampakkam**, **Attrampakkam** (13°14'; 79°0'), Dt Chingleput, situated in the Korttalayar basin, with other sites in the neighbourhood, forms one of the key sites for the s. Indian (Madras) Lower Palaeolithic industry [4.2.6]. Despite its having been denuded earlier by workers in prehistory, its tool output is prolific. The work in this area was initiated by Foote and King in 1863 and subsequently in 1935, by Krishnaswami, 1938, 1947, who noticed that the Palar plain around Madras was characterized by a spread of detrital laterite underlain at certain places by a Quaternary B overlying pre-Tertiary formations. The situation seemed to provide scope on archaeological grounds for a correlation with the mid-Pleistocene basal Narmada zone [4.2.2] and with the mid-Pleistocene of boulder-conglomerate zone of the Potwar [4.2.1]. Paterson, 1941, was the first to point out a quadruple Pleistocene terrace sequence around Madras, similar to what de Terra, 1939, had discovered in the n.-w. [4.2.1]. The laterite peneplain here is cut by the river Korttalayar (old Palar) and near the Red Hills at Erumaivethipalayam terrace features could be recognized. Not far from this place to the n., Manjanakaranai provided a relict piece of the terrace geology of the area, relatable to the aggradational terrace well-developed at Attirambakkam. At Attirambakkam itself Krishnaswami saw the stratigraphic evolution of the Acheulian [4.2] cultures from the lateritic basal gravels of the aggradational ter-

race to the loam on the top one. Handaxes are generally reminiscent of the very late or advanced Acheul types, as of the Miscoquian forms. Flakes noticed from the loam were Levallois as with faceted platforms [16.17.1] and much primary flaking on the upper surface. Another noteworthy contribution of the site is that here, unique so far among Indian Stone Age sites, was recovered by Foote at least one vestigial fragment of a human tibia (as identified by Busk and Boyd Dawkins of Oxford) from the wash-out of the implement-bearing conglomerate.

In 1964-5 K.D. Banerjee *et al.* (IAR 1964-5, p. 20) laid four trenches 1 km away from Attirambakkam along the right bank of the Budida-Manu-Vanka on the high cliffs of approximately 50 m contour, showing the following stratification: (1) Sriperumbudur shale with a clayey top and with embedded remarkably fresh handaxes and cleavers, it being uncertain whether the horizon of this industry was simply on the surface of the shale or was an overlying deposit now washed away; (2) detrital laterite, containing the post-Acheulian flake industry, the tool types including points, scrapers and longish blade flakes; (3) sterile brownish silt; and (4) top surface yielding microliths [4.5]. The work shows that the current view that the laterite gravel is the Acheulian horizon is incorrect and that the silt is not the horizon of the post-Acheulian flake industry.

Poondi, a closely allied contiguous site with a complementary stratigraphic sequence, was also excavated by Banerjee *et al.* (IAR 1965-6, p. 24). Situated on the earlier peneplain, the site revealed the following succession: (1) basal Sriperumbudur shale; (2) laterized shale *in situ*; (3) disconformity marked by uneven surface of the laterite; (4) sheet gravel of varying thickness, 50 cm to 5m, yielding Late Acheulian tools; (5) redeposited laterite; (6) sheet gravel, primary or redeposited, containing Middle Palaeolithic tools [4.3]; and (7) surface-sterile and sandy soil.

Neyveli (*ibid.*), located on a lower peneplain, showed: (1) Sriperumbudur shale; (2) disconformity marked by an uneven surface of the shale; (3) sterile pebble deposit; (4) lateritic gravel with Middle Palaeolithic tools; and (5) sterile sandy surface soil. The excavation indicated two industrial traits: the production of long blades during the Acheulian phase; and the predominance of points in the Middle Palaeolithic, with handaxes and cleavers in insignificant numbers.

de Terra, H., & Paterson, T.T., 1939, *Studies on the Ice Age in India & Associated Human Cultures*, Washington, p. 327. Foote, R.B., 1914, 1916, *The Foote Collection of Indian Prehistoric & Protohistoric Antiquities in the Government Museum, Madras*, pts. 2, Madras. Krishnaswami, V.D., 1938, in *Jour. Madras Geographical Association*, 13, pp. 58-90; 1947, in *Ancient India*, 3, pp. 58-90. Paterson, T.T., 1941, in *Trans. Royal Soc. Edinburgh*, 60, pp. 375-425.—K.V. SOUNDARA RAJAN

Atrudi, Dt Chandrapur. Megalithic stone circles [4.17.6],

IAR 1967-8.

Attur, Dt Triuchchirappalli. Megalithic Black-and-red Ware [11.15.3].

IAR 1963-4.

Atud-Khasa, Dt E. Nimar. Palaeoliths [4.24], microliths [4.5] and black-on-red painted pottery.

IAR 1959-60; 1962-3.

Au, Dt Bharatpur. OCW [11.5], PGW [11.14] and black-and-red ware.

IAR 1965-6.

Augand, Dt Kamal. Late Harappa [4.10] site also Known as Jasrath Tank. Several mud-brick structures are definable on the surface and the site is rich in faience [16.6] bangles.

Suraj Bhan & J.G., Shaffer, 1978, in *Man & Environment*, 2, p. 68.

Auhar Nallah, Dt Sagar. Lower Palaeolithic [4.2] tools. *Proc. Asiatic Soc. Bengal*, 1867. *Madhya Pradesh ki Ruparekha*, p. 37.

Aundh, Dt Satara. Early Stone Age (Lower Palaeolithic [4.2] tools, microliths [4.5], terracotta figurines [17], shell and glass bangles and broken stone images.

IAR 1961-2.

Aurangabad^a, Dt Bulandshahr. Early historical and medieval site.

IAR 1963-4.

Aurangabad^b, Dt Lucknow. Early historical site yielding NBPW [11.16] and later wares.

IAR 1969-70

Aurangabad^c, Dt Saharanpur. Site yielding grey ware associated with the NBPW [11.16].

IAR 1965-6.

Aurangpura, Dt Aurangabad. A Chalcolithic [4.14.6] site on the left bank of the river Dudua.

IAR 1961-2.

Autha (27°50'; 77°05'), Dt Gurgaon, a PGW [11.14] site. The skeleton of an elephant was partly exposed as a result of erosion and diggings by the local people on the slope of the mound. A small-scale excavation was undertaken (IAR 1964-5, p. 33) at the site to determine the age of the skeleton and its stratigraphical relation with the PGW. Pd I, a 2 m thick deposit, yielded the PGW. The painted designs on the bowls and dishes comprise groups of horizontal, vertical and oblique lines, wavy lines, dots, a combination of oblique lines over three rows of dots, dots between vertical lines, oblique lines ending in dots, intersecting loops, a group of circular lines touching a horizontal band, concentric semicircles and circles. Iron, mostly in lumps, occurred at all stages of the Ware. Amongst the associated wares are plain red, black-and-red [11.6.3] and black-slipped [11.13] wares. The other antiquities include glass objects, terracotta wheels and animal figurines, stone pestles and balls. But for a few post-holes no structural remains were observed.

Pd II was distinguished by the occurrence of the NBPW [11.16]. Though the fragments of this ware come only from the later levels, certain associated wares and

types are found overlapping with the earlier Pd. Large storage jars, terracotta animal figures, ear ornaments, bangles, flesh-rubbers, [18.4], dabbers [16.11] and beads and stone pestles constitute the important finds.

The limited area taken up for excavation being very much disturbed by a large number of pits, it was not possible to distinguish the two succeeding Pds stratigraphically. Pd III, however, belonged to the early centuries A.D. and Pd IV to the medieval age.

The elephant skeleton could not be assigned to any specific date as it was lying on the slopes of the mound subjected to regular erosion. Its remains rested on the top level of a deep pit cut into the PGW deposits and the natural soil and were sealed by eroded material of Pd II and later. The skeleton could, therefore, be roughly placed in the last stage of the NBPW.

—K.M. SRIVASTAVA

Avadha, Dt Valsad. Early Stone Age (Lower Palaeolithic [4.2] tools.

IAR 1964-5.

Avainasi, Dt Coimbatore. Megalithic site with dolmens [4.17.9].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras. IAR 1960-1.

Aval-Javal, Dt Ahmadnagar. Microlithic [4.5] site.

IAR 1971-2.

Avalanayakanur, Dt Mysore. Megalithic cist burials [4.17.8].

IAR 1961-2.

Avalanche, Dt Nilgiri. Megalithic site with cairns [4.17.9].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Avamapuram, Dt Madurai. Russet-coated Painted Ware [11.22].

IAR 1957-8.

Avantipura. See VANTIPUR.

Avati-Koligudda, Dt Kolar. Megalithic site with cist circles [4.17.8].

Seshadri, M., 1956, *Stone-using Cultures of Pre- & Proto-historic Mysore*, London, p. 6.

Aviyur, Dt Madurai. Palaeoliths [4.2-4].

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Awra, Awhra, (24°8'; 75°30'), Dt Mandasaur, 10 km from Dhamnar which is well known for its caves (ASI—AR, 2, p. 270; ASI—AR 1905-6, p. 107). In continuation of the exploration of the Chambal valley (IAR 1956-7, p. 5; 1958-9, p. 27; 1959-60, p. 22), in 1960-1 the writer and V.S. Wakankar excavated the site, with seven mounds, large and small but originally forming one unit, now submerged in the waters of the Chambal dam. Two of the mounds, II and III, were excavated down to the natural yellow silt. Mound II was seen to have been

occupied from c. 4th century B.C. to the beginning of the Christian era, but in mound III, with its over 5 m thick deposit, the earliest occupation was Chalcolithic [4.14.5] and with a slight break it continued to be under occupation till the 3rd-4th century A.D.

Pd I. Stone Age tools have been found only on the surface, no stratigraphic evidence being available.

Pd II. Chalcolithic (c. 1500 to 600 B.C.). This Pd is characterized by fine painted pottery, a blade industry and other associated objects. The lowest levels have incised pottery underlying deposits with the white-painted black-and-red ware [11.6.2] recalling the corresponding ware from NAGDA and AHAR. The black-painted designs on the red ware are linear and geometric patterns, oblique or vertical strokes, blank or cross-hatched triangles, wavy and zigzag bands and human, animal and plant motifs. On the black-and-red ware the paintings are in light-brown or tan, with designs of bands, strokes, dots, chevrons and crisscross lines, the common types being the bowl, dish and globular vessel. Sometimes the interior is also painted. This pottery is found throughout at GILUND and in the lower levels of MAHESHWAR-NAVDATOLI. Blades with blunted back, parallel-sided blades and pen-knife blades show a well-developed blade industry, lunates, scrapers and trapezes being rare.

Pd III, early historical A (c. 600-100 B.C.). The Chalcolithic culture of Pd II merged into the early historical period, Pd III, as suggested by the overlap of the painted pottery with the NBPW [11.16]. The other characteristics of Pd III, are the use of iron, black-and-red ware and punch-marked and cast coins [3.1]. Only half-a-dozen sherds of the NBPW have been found, and the only recognizable shape is the characteristic bowl. Of the black-and-red ware no complete vessels have been found. Some sherds are internally polished in black, while some others are altogether untouched but show marks of grass, etc., used as binding material—a peculiarity seen also at MAHESHWAR-NAVDATOLI. The other fabrics are coarse red and coarse black, the first lesser in quantity. The houses of the Pd are built on coarse rubble foundation mortared in black clay. The walls are made of perishable material like wood or bamboo and roofs of tiles with nails. Iron arrowheads, spearheads, nails, hooks and the like occur. The kitchen equipment consists of legged querns, pestles [6.19], earthen ovens, bowls and dishes with broad or featureless rims and round-shaped jars. Beads and bangles of conch, copper and ivory represent ornaments. Toys consist of terracotta wheels and bull, horse and dog figurines. The Pd is particularly remarkable for the advanced system of drainage as seen from fragments of drains of pottery pipes joined together with elbow-bends, ring-wells [14.15] or soak-pits and soak-



Fig 2. Awra: designs on chalcolithic pottery.

wells made by putting one large jar of cut base over the other.

Pd IV, early historical B (c. 100 B.C. to A.D. 300). The *Pd* is characterized by the occurrence of the Red Polished Ware [11.23] and the associated pottery with black designs on a bright-red slip, resembling that found

at sites in Gujarat such as VADNAGAR. Some sherds presenting a slight similarity with the Rang Mahal Ware [11.24] also occur. Moulded decorated bowls are a notable feature. Rare sherds decorated with overlapping applied scales appear to be an imitation of the Roman ware. The structural remains have foundations of large



Fig 3. Awra: decorated sherds, Period IV.

brick arranged in pebbles mixed in sticky black clay and shown in the upper levels a well-thought-out plan. Brick was used in ovens. The manufacture of ivory and shell bangles was a flourishing industry. The important feature of the Pd is the contact with the Roman world, as seen in the fragments of Roman pottery and its imitations and a clay bulla [6.4] bearing impression of a Roman coin. A clay plaque with the figure of a goddess standing on a full-blown lotus on the obverse and decorated designs on the reverse is a unique find.

Pd V, early historical C (A.D. 300-400). The meagre finds of this Pd consist of spouts, sprinklers, thick Red Polished Ware, charred grains of millet, a crude mother goddess figurine and terracotta toys.

The site was deserted after the 5th century but was re-occupied in the late medieval times as seen from a few surface finds.

—H.V. TRIVEDI.

Awri, Dt Mandsaur. The upper, third gravel on the river Chambal yielded tools of Series II (Middle Palaeolithic [4.3], mainly blades, flakes and scrapers.

IAR 1959-60.

Ayodhyā (26°48'; 82°14'), Dt Faizabad, situated on the right bank of the Sarayu. According to the *Rāmāyaṇa* of Vālmiki, the date of the original composition of which

has been a matter of debate but which is generally believed to have been finalized in the early centuries of the Christian era, Ayodhyā was the capital of the Kosala kingdom, one of the kings of which was Rāma regarded by Hindus as an incarnation of Viṣṇu. The city also finds reference in Buddhist and Jain texts. It is believed to have been the birth-place of the first and fourth Jaina Tirthankars, and Buddha is also stated to have stayed here for some time. Thus, traditional and literary associations have cast a halo around the place. To check up archaeologically the antiquity of Ayodhyā and other sites associated with the *Rāmāyaṇa* story the ASI and the Indian Institute of Advanced Study under the direction of the present author have jointly embarked upon a project which is still (1978) under way. Earlier the Banaras Hindu Univ. had also laid a couple of trenches here.

The ruins at Ayodhyā have a circuit of about 4 to 5 km and rise at places to a height of about 10 m above the surrounding ground-level. Exploratory trenches have so far been put at about half-a-dozen spots which include the famous Janma-bhūmi area and lands close to Hanuman Garhi, Sita-ki-Rasoī, Asharfi Mahal, etc. Since areas close to the river, which might (or might not) reveal a still earlier occupation yet remain to be

thoroughly examined, the final word about the antiquity of the site has to wait. On the basis of the excavations carried out so far, it appears that the site came under occupation at a time when the NBPW [11.16] of a very fine quality and in a variety of shades—steel-grey, blue, silvery and golden—was in use. It is now possible to distinguish at least two stages in the history of this ware, and the first occupation at Ayodhya would belong to the earlier stage. Alongside the NBPW, grey ware with simple linear decorations in fugitive black colour—evidently a developed form of the PGW [11.14]—was also in use. The houses were made of wattle-and-daub or of mud. The use of kiln-burnt brick for house construction was not in evidence. Both iron and copper were in use. Although no ^{14}C dates for the earliest levels of Ayodhya are yet available, those obtained from other sites like MATHURA, NOH, etc., on the one hand and KAUSAMBĪ on the other show that with proper MASCA correction [5.3] the beginning of the NBPW may go back to *circa* 7th century B.C., if not earlier.

As time passed, but still within the NBPW period, houses began to be constructed of kiln-burnt brick and terracotta ring-wells [14.15] also came into existence. An interesting find of *c. 4th-3rd century B.C.* was a Jaina figure in grey terracotta, being amongst the earliest, if not the earliest, Jaina figure found so far. The successive levels of the site yielded various coins [3.1] such as punch-marked, uninscribed cast copper and inscribed copper, for example those of king Muldeva, and several

terracotta sealings, for example those of kings Vayudeva, Vijayamitra, etc. The occupation continued in this manner up to *c. 4th century A.D.*

A noteworthy discovery from levels ascribable to the 1st-2nd century A.D. was that of the Rouletted Ware [11.21], which may be taken as signifying trade with *e. India* where the ware has been found in greater quantity, though no doubt it occurs in abundance only farther *s. along the e. coast*. The Sarayu, which joins the Ganga near Chhapra, must have been the chief course for this trade. Indeed, large boats laden with cargo are known to have moved up and down the river until recently.

The trenches excavated so far have shown no evidence of occupation between the 5th and the 10th centuries, although inscriptional evidence from other parts of the country would suggest that the site was under occupation during the Gupta period. Likewise, the Chinese pilgrims, Fa-Hien and Hiuen Tsang are stated to have visited the place respectively in the 5th and 7th centuries A.D. Within a couple of centuries after the re-occupation of the site around the 11th century the usual medieval glazed wares appeared on the scene. Since the medieval times the site has struggled on in one way or another, many of the now-standing temples having been erected during the past two centuries only.

—B.B. LAL

Azadnagar Indore, Dt Indore. Site with Kayatha Ware [11.7].

Wakankar, V.S., 1976, in *Arch. Congress & Seminar, 1972, Kurukshetra*.

B

Babaori, Dt Sidhi. Tools of the early and Middle Stone (Lower and Middle Palaeolithic [4.2, 3] Ages.

IAR 1962-3.

Babarkot¹, Dt Bhavnagar. Extensive mound with Harappa pottery [11.3].

IAR 1955-6.

Babarkot² (22°15'; 71°30'), Dt Surendranagar. Late Harappa [4.10] site assignable to Pds II B and II C of RANGPUR.

AI, 18 & 19, 1962 & 1963, p. 205.

Babhaliapada, Dt Dhule. Short blades ascribable to the Chalcolithic period [4.14.6].

IAR 1965-6.

Babra, Dt Rajkot. Harappa [4.9] site.

IAR 1965-6.

Babund, Dt Ahmednagar. Sherds of thick grey Ware.

IAR 1960-1.

Babhaj, Dt Dhule. Late Stone Age (Mesolithic [4.5]) site.

IAR 1969-70.

Babhnauli, Dt Gorakhpur. Black-and-red Ware [11.6.3]

IAR 1963-4.

Babhulda, Dt Dhule. Chalcolithic habitation [4.14.6] site.

IAR 1966-7.

Babukasitktaur, Dt Basti. Black-and-red Ware [11.6.3] and NBPW [11.16].

IAR 1963-4.

Baburdi, Dt Ahmadnagar. Tools of Series II (Middle Palaeolithic [4.3]) and microliths [4.5].

IAR 1961-2.

Babusahib-gudem, Dt Nalgonda. Neolithic [4.6] site.

AIR 1961-2.

Bachamdi, Dt Bharatpur. Kushan red ware.

IAR 1971-2.

Bachihal, Dt Bijapur. Microliths [4.5] (of unspecified nature).

IAR 1961-2.

Bachinmaradi, Dt Bijapur. Neolithic [4.6.9] site yielding polished stone axes and a few grey ware potsherds.

Karnataka Bharati, 9, 4, p. 80.

Badada. See 4.6.3.

Badagaon, Dt Shajapur. Chalcolithic site yielding Kayatha [11.7], Banas [11.6.2] and Malwa [11.10] Wares and punch-marked and cast copper coins [3.1].

IAR 1969-70.

Badakajekaru, Dt S. Kanara. Megalithic [4.17.8] site

with port-holed chambers and pot-burials.

Jour. Karnataka Univ., 10, 1974, pp. 3-4.

Badakeshwar, Dt E. Nimar. Series I (Lower Palaeolithic [4.2]) tools.

IAR 1960-1.

Badalpur (20°53'; 70°29'), Dt Junagadh. A few Middle Stone Age (Middle Palaeolithic [4.3]) tools were found in a pebbly gravel-bed exposed in the old bed of the Saraswati near the village.

IAR 1971-2.

Badmakanahalli, Dt Kolar. Megalithic stone circles [4.17.8]. (Same as following?)

IAR 1970-1.

Badamakulahalli, Dt Kolar. Megalithic site [4.17.8] with stone circles. (Same as preceding?)

Information from A. Sundara.

Badanahatti Hill, Dt Bellary. Palaeolithic [4.2] site.

Foots, R.B., 1916, Indian Prehistoric & Protohistoric Antiquities, Madras, pp. 77-8.

Bada-Samana, Dt Rupnagar. Harappa pottery [11.3].

IAR 1964-5.

Badaun-Kalan, Dt Allahabad. Cairn circles and dolmenoid cists [4.17.3].

IAR 1962-3.

Badausa, Dt Banda. Polished stone axes and hammerstones [4.6.3].

IAR 1961-2.

Baddi, Dt Rupnagar. PGW [11.14] site.

IAR 1954-5.

Baddih, Dt Bankura. Tools of Series I (Lower Palaeolithic [4.2]) and microliths [4.5].

IAR 1959-60.

Bade ala. See Silana.

Badeda, Dt Hissar. Early historical site.

Silak Ram, 1972, unpublished thesis, Kurukshetra University.

Badegaon, Dt Nagpur. Megalithic site with stone circles [4.17.6].

IAR 1970-1.

Badhana, Dt Jaipur. OCW [11.5] site.

IAR 1972-3.

Badhanli-1 & -2, Dt Ambala. PGW [1.14] site.

IAR 1963-4. Suraj Bhan, 1975, Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide, Kurukshetra.

Badhsa, Dt M̄hendragarh. Pre-Harappa site [4.8].

Suraj Bhan, 1975, Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide, Kurukshetra, p. 126.

Badi Jamunghiri. See LAKHAJAUR.

Badkundri, Dt Belgaum Megalithic [4.17.8] site.

IAR 1966-7.

Badli¹, Dt Mahendragarh. Pre-Harappa [4.8] site.

Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 126.

Badli², Dt Rohtak. Pre-Harappa [4.8] site.

Jour. Haryana Studies, 3, 1, p. 7.

Badli-ki-Sarai, Delhi. PGW [11.14] site.

IAR 1957-8. Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 126.

Badnagar, Dt Jaipur. Kushan red ware.

IAR 1972-3.

Badnapur, Dt Aurangabad. Chalcolithic [4.14.6] site on the bank of the river Dudhua. Microliths, black-on-red and black-and-red potsherds, the latter with graffiti, were collected.

IAR 1960-1.

Badnawar, Dt Dhar. Site with painted pottery.

IAR 1956-7.

Badne, Dt Dhule. Tools of the Early and Middle Stone (Lower and Middle Palaeolithic [4.2-3]) Ages.

IAR 1962-3.

Badoni, Dt Datia. Early historical site yielding typical Gupta pottery and a few pieces of Roman pottery.

IAR 1971-2.

Badra, Dt Mayurbhanj. Microliths [4.5].

IAR 1958-9.

Baga, Dt Mirzapur. Rock-shelter with paintings [13].

Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad.

Bagalkot, (16°12'; 75°42'), Dt Bijapur. Bagalkot on the GHATAPRABHA with two successive gravel beds along the profile of the stream was found to contain in succession tools of Series I (Lower Palaeolithic [4.2]) and II (Middle Palaeolithic [4.3]). The higher and smaller gravels had tools of Series III (Mesolithic [4.5]).

IAR 1955-6.

Bagan valley, Dt Chittaurgarh. The cliff sections along the river Bagan, from the bridge on Udaipur-Chittaur road to the confluence of the Bagan and Berach, yielded Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2-3]) tools.

IAR 1961-2.

Baga-Pahari, Dt Mirzapur. Prehistoric paintings in rock-shelters [13].

IAR 1962-3.

Bagevadi, Dt Bellary. Early historical site [4.18.11].

IAR 1962-2.

Baghai Khor, Dt Mirzapur, near Bhainsaur, with painted rock-shelters [13] and microliths of the Mesolithic [4.5] tradition, excavated by R.K. Varma of the Univ. of Allahabad. It revealed in its earliest open-air habitation deposit non-geometric microliths blunted-back blades, lunates, awls and burinated tools. The next upper layer had in addition a few small sherds which can be divided into three groups: ill-fired ochre-washed, handmade, of coarse greyish section; thin sectioned and with ochrous red slip; and also thin-sectioned

but better fired and well-made. The next upper deposit had microliths of both non-geometric and geometric types alongside the pottery of the earlier deposit. Iron objects were only superficial.

An excavated rock-shelter yielded more or less the same sequence. In addition an extended burial with an articulated female skeleton was found buried with a w.-e. orientation in a pit cut down to the bed-rock, which was dressed so as to provide a raised platform for the head and feet and a depression for the body.

Varma, R.K., 1965, in Misra, V.N., & Mate, M.S., ed., *Indian Prehistory*, 1964, Poona, pp. 73-4.—A. GHOSH

Bagh caves, Dt Dhar. Microliths including cores and flakes [4.5].

IAR 1959-60; 1963-4.

Baghaura (28°13'; 77°19'), Dt Gurgaon. PGW site [11.14].

Lal, B.B., 1954 & 1955, in *AI*, 10 & 11, p. 138.

Baghmuri, Dt Bankura. Microliths and flakes [4.5].

IAR 1961-2.

Baghpat (28°57'; 77°13'), Dt Meerut. PGW [11.14] and NBPW [11.16] site.

Lal, B.B., 1954 & 1955, in *AI* 10 & 11, p. 138.

Baghru, Dt Jind. Pre-Harappa [4.8] site comparable to late SISWAL. See YAMUNA VALLEY.

Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 125.

Baghur, Dt Bijapur. Chalcolithic habitation site [4.14.8] yielding the Jorwe Ware [11.11] grey ware similar to that of BRAHMAGIRI, microliths and polished stone axes.

IAR 1959-60; 1960-1.

Bagor (25°21'; 74°23'), Dt Bhilwara, on the left bank of the Kothari river, a tributary of the Banas, 25 km w. of the Dt headquarters, lying in the centre of the undulating rocky plain of Mewar, about 500 m above sea level. Much of the plain is covered by an open woodland of *khejri* (*Prosopis spicigera*), *babul* (*Acacia arabica*), *dhak* (*Butea frondosa*) and *khajur* (*Phoenix sylvestris*). The rainfall of the region varies from 60 to 70 cm. Extensive tracts of rocky ground provide adequate pasture for sheep, cattle and camels, and pastoralism is an important segment of the rural economy. Wildlife is now sparse in the region but is known to have been plentiful till recently. The Kothari is not a perennial river but a depression on the n.-w. edge of the village, probably a remnant of a former course of the river, retains water all the year and must have been a major source of water for prehistoric human and animal populations. The dune is composed of wind-blown sand and the habitation materials occur throughout the sandy deposit, thus attesting that the dune was under active formation when the prehistoric man inhabited it.

The prehistoric site lies on a large and prominent sand dune, locally known as Mahasati, overlooking the left bank of the river about 1 km e. of the village. The site

was discovered in 1967 by L.S. Leshnik of the Univ. of Heidelberg and the writer as part of a long-term project of investigation into the prehistory of n.-w. India, originally begun by the author in 1958. A preliminary dig revealed the rich potentiality of the site and further excavation on a large scale was carried out during three seasons from 1968 to 1970 jointly by the Dept of Arch., Pune Univ. and the Dept of Arch. and Museums of Rajasthan under the direction of the author. To date Bagor is the largest Mesolithic [4.5] habitation site excavated in India, and it has been horizontally excavated so as to expose extensive living floors. The variety and quantity of cultural materials recovered from the site are rich and varied compared to most Mesolithic sites so far known, and it has given an insight into the process of acculturation in a Stone Age community arising from contact with full-fledged farming cultures. Bagor also possesses the largest number of ^{14}C dates amongst all sites of its nature and is thus the most securely dated of all mesolithic sites in the Indian subcontinent.

In the centre of the Mahasati dune, covering an area of 200 m e.-w. and 150 m n.-s. and rising to a height of 6 m above the surrounding ground, a compact area of 20×10 m divided into 15 trenches, ten of them 4×4 m and five 4×2 m, was dug. Five layers were recognized, mainly from changes in the colour of the sand, but within each the deposit was relatively homogeneous and so no separation of fine habitation or sedimentary layers was possible. Consequently rather arbitrary spits of about 10 cm in depth were excavated, and all finds were related to these as well as to the broad stratigraphic divisions.

Layer 1, 5 to 10 cm in thickness, is composed of whitish sand of seemingly more or less recent origin. Layer 2, 80 to 90 cm thick, is of dark-brown sand contains most of the habitation deposit. Layer 3 is 70 to 80 cm thick and consists of fine brown sand. Occupational evidence decreases in the middle of this layer and is completely absent in its lower part. Layers 4 and 5 are archaeologically sterile.

Cultural sequence. The total thickness of the habitation deposit in the trenches is about 1.150 m, representing an occupation lasting for some 4000 years. In earlier publications the author had divided the occupation into three phases. But on rethinking over the evidence he is now inclined to divide the sequence into two Pds with a break of occupation in between. Phases I and II (of earlier sequence) would belong to Pd I and Phase III to Pd II. No stratigraphic break was however visible between the two Pds primarily because of the sandy nature of the deposit. Since the occupation of Pd II took place immediately over the Pd I deposit, a certain admixture of the cultural materials of the two Pds was inevitable in a soft sandy medium.

Pd I, Phase I (c. 5000 to 2500 B.C.), occupies the lower 50 to 80 cm of occupation deposit. Here microliths and animal bones were most profuse, and the economy was based on a combination of hunting-gathering and herding. People lived in huts with stone-paved floors and probably wattle walls, or were sheltered behind wind breaks. The dead were buried in an extended position laid out e.-w. Phase II (c. 2500-1000 B.C.) occupies the next 30 to 50 cm deposit. Microlithic tools and animal bones begin to decline in quantity, but copper tools and pottery make their appearance. The pottery is hand-made with incised decoration. The dead were buried in a flexed position and oriented w.-e. and the graves were richly furnished with pots, metal tools, ornaments and food offerings. Increased material prosperity implies a more secure and stable economy suggesting the possibility of plant agriculture and a greater reliance on animal domestication.

Pd II (c. 500 B.C. to A.D. 200) is restricted to the central part of the mound where the occupation was 35 to 75 cm thick. The microlithic industry is very poor in quantity and is perhaps derived largely or entirely from the deposit of Phase II. Animal bones are scarce and highly fragmentary. Iron tools come into use and the pottery is more plentiful and is entirely wheel-made. Glass beads are added to the repertoire of ornaments; bricks and tiles are used alongside stone in structures.

Microlithic industry. The flaked stone industry is unusually rich, with several hundred thousand worked pieces, and comprises the most common material at Bagor. No other site in India or perhaps outside has yielded microliths in such enormous numbers. The greatest density is found in Phase I, which contains 45 to 55% of the material, but it declines progressively in Phase II and Pd II. No marked typological change is noticeable from the lower to the upper levels. Quartz and chert are the most common raw material used and although quartz predominates in the waste material because of its intractable nature the majority of the finished tools are of chert.

The stone industry of Bagor is truly microlithic in that it is based on the mass production of microblades and their conversion into various microlithic forms. Large tools such as scrapers and burins made on flakes or cores are rare. The most common types and their frequencies are as follows: (1) blades with flat retouch (2.78%); (2) blunted-black blades (48.85%); (3) obliquely truncated and blunted-black blades (18.51%); (4) triangles (14.19%); (5) trapezes (1.20%); (6) crescents (3.86%); (7) points (10.06%); and (8) other tools (0.55%).

Technologically a distinctive feature of the industry is the virtual absence of the crested-ridge-guiding technique [16.15.2]. Although occasional tools measure 40 mm or more in length most are between 15 and

20 mm and some measure only 5 to 10 mm. These latter are perfectly symmetric in form and are very carefully retouched. It is indeed a puzzle as to how such tiny pieces could at all have been hafted and used.

Copper tools. Five well-defined copper objects, one spearhead, one thin rod and three arrowheads, were found among the offerings of two burials of Phase II. The arrowheads measure from 20 to 25 mm in length. Two of them have a concave crescentic base and the third has a barbed base; all the three are provided with two holes near and parallel to the base, which must have been used to secure them to the shaft with a string, metal wire or rivets. Similar arrowheads but without holes are known from a number of Harappa sites in Sind, Punjab, Baluchistan, Rajasthan and Gujarat, and one specimen is known from the Chalcolithic levels of INDORE. Since there is no evidence to suggest that the people of Bagor themselves practised metallurgy, the plausible explanation is that they obtained metal tools from a source that also catered to the needs of the Harappa and other communities.

Iron tools. Besides many small bits of iron two arrowheads came from Pd II. One of them is socketed and the other tanged.

Pottery. Isolated and small bits of pottery, 1 to 2 cm in size, appear almost down to the bottom of the occupation deposit. They had almost certainly sunk from the upper levels by infiltration, assisted by decaying rootlets and burrowing of rodents, into the soft sandy soil. Phase I is best regarded as devoid of pottery in the cultural sense. It is only Phase II and Pd II that are culturally associated with pottery. The pottery of Phase II is made of gritty and micaceous clay. Both surfaces of the pot are treated with a slip of fine clay and the outer surface is often burnished. A wash of bright-red colour was applied over the slip but in most phases it has largely faded away and the present surface colour is dull-brown. The pottery is poorly fired and fragile. Most of the pots seem to have been made entirely by hand or by the use of slow wheel or turntable. There are a few sherds with a black inner surface which suggests attempts at producing a black-and-red ware. The shapes include the broad-mouthed jar of various sizes, the small *lotā*-like pot, large shallow basin, some smaller and deeper basin and bowl in a range of sizes. Though no complete pot is decorated many sherds bear incised designs which include groups of parallel bands, chevrons, herring-bone patterns, criss-crosses, groups of short strokes and finger-nail incisions. There are some affinities between the Bagor pottery and that of the KAYATHA [11.] and AHAR² [11.6.2] cultures of Malwa and Mewar in fabric and shapes. Judging from the technological and economic status of the Bagor settlement it would appear that the pottery was obtained from agriculture-based

village settlements in the area rather than produced by the local people themselves.

The pottery of Pd II is different from that of Phase II and does not develop out of the latter. It is entirely wheel-made. The firing is better and the pots are thinner and lighter. The surface is rarely treated with slip or wash. The common shapes are the large jar, small cylindrical pot and bowl with broad mouth and narrow flat base. Decoration is rare and where present consists of simple incisions.

Structures. In phases I and II the only structures are large floors made of schist slabs quarried from rocks across the river together with occasional pebbles. Some of these floors covered the entire excavated area. But it is difficult to discern any recognizable pattern in most of them. In some places however the stones appear to be aligned in a circular fashion with diameters of 3 to 5 m. These stones were likely to have been arranged on the outer periphery of circular wattle huts or wind breaks to protect them from strong winds. At several places small areas, 40 to 70 cm across, were paved with lightly packed stones and these were associated with concentration of animal bones. They probably represent butchering floors. In Pd II kiln-burnt bricks—mostly fragmentary—and tiles are also used in construction. In one case a wall nearly 3 m long and 1 m wide was made of massive and partly dressed stones.

Disposal of the dead. Five burials were found, one in Phase I, three in Phase II and one in Pd II, all of them within the settlement area. In Phase I the body was laid in an extended position with the lower left arm resting partly over the trunk and with the head towards the w. No grave goods were offered. In the three burials of Phase II the body was laid in a flexed position, with the head to the w. Whether this change in the burial practice signifies a change in the ethnic composition of the community is not possible to say as the skeletons of both phases I and II are too poorly preserved to draw any meaningful conclusions about their physical features. These burials were provided with many offerings in the form of pottery food vessels (originally no doubt full), ornaments, metal objects and cuts of meat. In one of the burials 36 beads of stone and bone were found strewn on the chest and around the neck. These must have been originally strung and worn as a necklace. With the same burial a fragmentary terracotta spindle whorl [6.25] was placed near the feet. The sole burial found in the deposit of Pd II turned out to be a much later interment, not culturally related to this Pd because of the association of a medieval coin with it.

Ornaments. In Phase I a few stone beads similar to those of Phase II were found. They are probably derived by infiltration from Phase II. The necklaces from Phase II referred to earlier consists of tiny tubular and

barrel-shaped beads of banded agate, carnelian, garnet and bone. In Pd II glass beads were also used and there were several kinds of stone pendants. Pieces of *geru* or ochre found throughout the deposit may have been used for decorating the human body.

Stone objects. Hammer-stones bearing tell-tale marks of bruising and used no doubt for making microliths and splitting bones were found throughout the deposit but were more common in Pd I. Those of spherical shape were probably used as sling-stones. In Phase II were also found two perforated stones of the type regarded as mace-heads or digging-stick weights.

Food and economy. The only direct evidence for the reconstruction of the subsistence basis is the animal bones which were found in large quantities. Of the 2266 identified bones 72.29% came from Phase I, 19.06% from Phase II and only 2.65% from Pd II. The following animals are represented: sheep/goat (*Ovis orientalis vignei*/*Capra hircus aegagrus* L.), humped cattle (*Bos indicus* L.), pig (*Sus scrofa cristatus* Wagner), buffalo (*Bubalus bubalis* L.), blackbuck (*Antelope cervicapra* L.), chinkara (*Gazelle gazella* Pallas), chital (*Axis axis* Erxl.), sambar (*Cervus unicolor* Kerr), hare (*Lepus nigricolis* F. Cuvier), fox (*Vulpes* sp.) and mongoose (*Herpestes* sp.). In all phases sheep/goat bones account for between 60 and 80% of the bones, and these belong to the domesticated species. The economy of Bagor therefore was based from the outset on a combination of hunting-gathering and stock-raising. In Phase II the appearance of new material traits like copper tools, pottery, stone and bone beads and richly furnished graves as also the decline in the quantity of microliths and animal bones indicate increased economic stability and prosperity, and by inference imply greater reliance on stock-raising. The presence of perforated stones, ethnographically documented for their use as weights of digging sticks, might suggest practice of rudimentary agriculture. The presence of tortoise and fish bones shows the exploitation of aquatic resources as well.

Dating. Five ^{14}C determinations, all obtained from uncharred bones, are available. These are (all B.P.): Phase I + 6430 \pm 200, 5785 \pm 130, 5235 \pm 90; Phase II, \pm 4715 \pm 105, 4060 \pm 90. Though no dates are available from the lowermost levels of Phase I it may not be unreasonable to put the beginning of this Phase around 5000 B.C. The beginning of Phase II can be put around the middle of the 2nd millennium B.C. because archaeological evidence does not justify expecting copper tools and pottery before that date in this area. The end of this phase cannot securely be dated owing to lack of ^{14}C determinations but it is tentatively put around 1000 B.C. Pd II, because of the presence of iron tools and pottery with Mauryan and Kushan period affinities, can be dated between 500 B.C. and A.D. 200 or even slightly

later.

Misra, V.N., 1970a, in *Jour. Near E. Studies*, 29, 4, pp. 221-32; 1970b, in *Indian Antiquary*, New Series, 4, 1-4, pp. 85-95; 1972, in Deo, S.B., ed., *Arch. Congress & Seminar*, Nagpur, pp. 58-65; 1973a, in *World Arch.*, 5, 1, pp. 92-110; 1973b, in *East & West*, 23, 3-4, pp. 295-305.—V.N. MISRA

Bagrai, Dt Jabalpur. Microliths [4.5].

IAR 1960-1.

Bagridihi, Dt Midnapur. Neolithic [4.6.4] site.

Das Gupta, P.C., 1966, *Exploring Bengal's Past*, Calcutta. IAR 1962-3.

Bahadar, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1965-6.

Bahadrabad (29°55'; 78°02'), Dt Saharanpur, 12 km w. of the Ganga canal headworks at Hardwar. While a diversion channel was being excavated here for siting a hydro-electric power-house, the discovery of some sherds of red ware and later of a hoard of copper objects was reported by the excavating contractor from deep down the earth. The hoard contained several rings, flat celts, a shouldered celt and a hooked spearhead. It was clear that this was one of the so-called Copper Hoards of the Ganga Valley [4.11] of uncertain authorship and cultural moorings. Despite loss of valuable direct evidence, several trenches at right angles to the channel on both the sides were laid in 1952 by the writer on behalf of the ASI. After cutting through a thickness of 5-7 m of alternating sterile layers of sand and pebbles was found an occupational layer, hardly 60 cm thick yielding a good amount of red ware but no copper object. Immediately above the natural soil on the s. flank of the channel lay some quartzite flake tools and waste flakes. Obviously these tools had no connection with the pottery and lay there before the arrival of the pottery-using people. According to Krishnaswami, 1953, this industry 'belongs to a flake-tool complex assignable to two broad facies: (i) cleaver-chopper made on a mammoth lunate reminiscent of a microlithic lunate; and (ii) a jagged wavy-edged scraper formed by a different technique as revealed in the Early to Late Sohan [4.2] industry.'

Made from medium-grained well-levigated clay and mixed with fine to coarse sand as *dégraissant*, the ordinarily thick pottery from Bahadrabad has bright-red to terracotta-buff surface and is occasionally greyish. Originally it was covered with a thick red slip which sticks to the lumps of clay or peels off as soon as the sherds are lifted. Normally the occupational layer is water-bound and only a continuous pumping out of the water lowered its table and made excavation possible. With a worn-off surface the sherds have a rolled appearance. No painting has been noticed, and if there were any, which is likely, they have disappeared with the peeled-off slip. Wavy incised decorations or notchings of cord design occur along the belly on a few pots. A looped handle has also

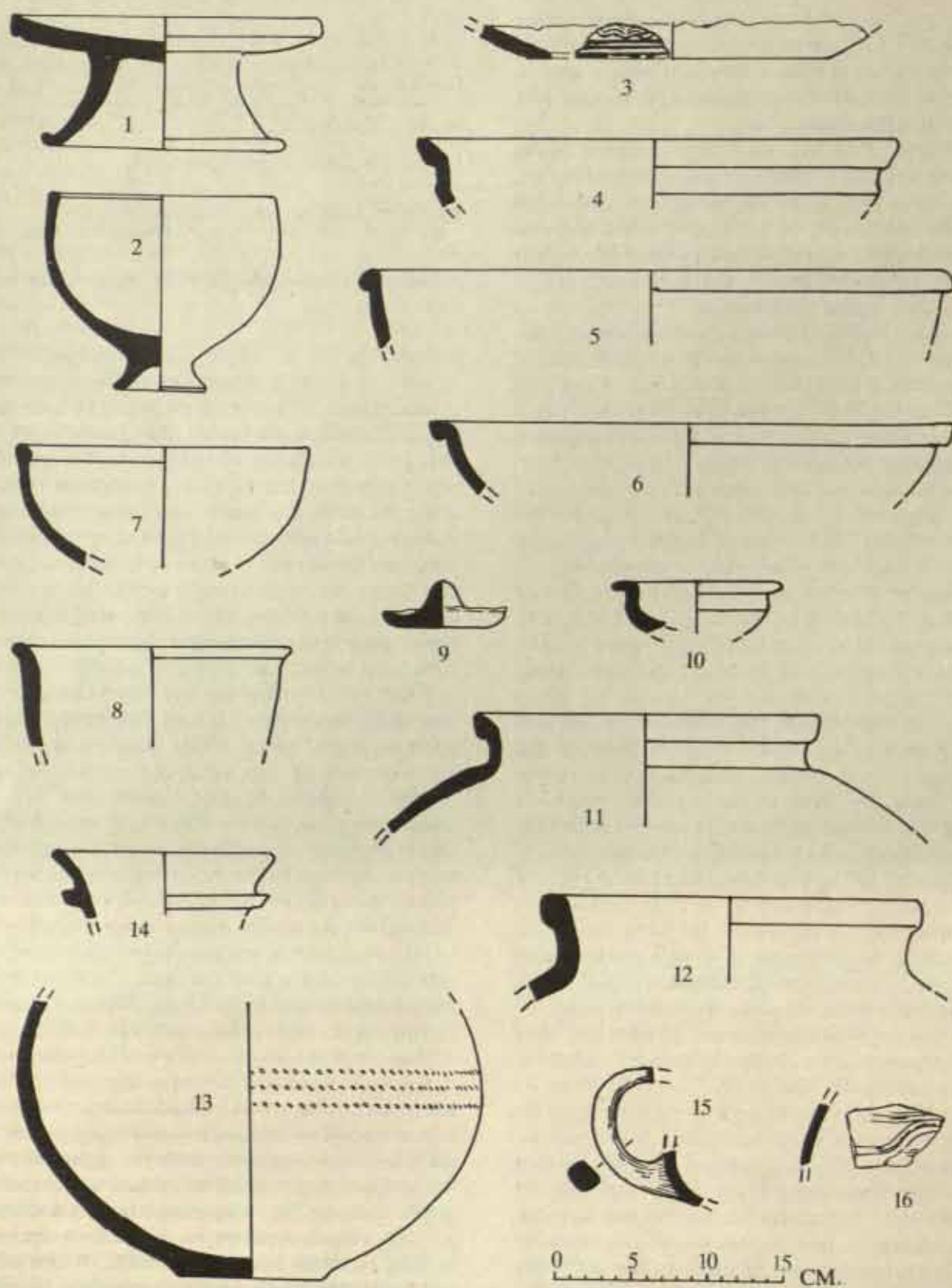


Fig. 4. Bahadrabad: pottery.

been found. The range of the shapes of pottery is limited, although this may be due to the fact that the major part of the settlement was thrown up by the canal-diggers. Among the available forms are: the dish-on-stand with a wide and short stem and shallow dish; pedestalled cup; internally incised basin with open base; bowl or dish with undercut, beaked or out-turned rim; deep bowl; knobbed lid; lid with out-turned rim; and jar with flat base. The jars have either a narrow neck and thickened and everted rim or comparatively long neck and everted rim. One of the fragments shows a flange below the flaring mouth of a jar.

Lal, 1953, tried to provide a ceramic context to the Copper Hoards of the Ganga valley by suggesting that they were associated with the so-called OCW [4.12]. The occurrence of a red ware of ochre-coloured ware with copper objects at Bahadurabad seemed to lend support to this view. But the discovery of a copper harpoon at SAIPAI in a regular excavation along with a pottery which has little in common with the Bahadurabad pottery has thrown doubt on that equation. The so-called OCW from other sites, such as ATRANJIKHERA, LAL QILA and JODHPURA is also of a different class and assemblage. (Ghosh, 1973, has doubted the OCW as representing a distinct culture.) In the circumstances all that can be said at present is that the red ware of Bahadurabad appears to have some parallels with the pottery from BARA. The copper objects might well have been manufactured by nomadic craftsmen, such as the Gadul Lohars of the present day and supplied to different but contemporary folks inhabiting the Ganga valley before the arrival of the PGW [4.15] people.

Ghosh, A., 1973, *City in Early Historical India*, Simla, p. 80. Krishnaswami, V.D., 1953, in *AI*, 9, p. 11. Lal, B.B., 1953, *ibid.*, pp. 91-9. Sharma, Y.D., 1971-2, in *Purātattva*, 5, pp. 39-42.—Y.D. SHARMA

Bahadurgarh, Dt Rohtak. PGW [11.14] site.

Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 125.

Bahal (20°35'; 75°5'), Dt Jalgaon, on the left bank of the Girna, a tributary of the Tapti, the site partly covered by the modern village but a substantial portion remaining unoccupied, with a Yādava period temple of Bhavāni and a Maratha *gadhi* of the Pawars at the top. Located on the ancient trade-route from MATHURA to Pratiṣṭhāna (PAITHAN), which after crossing the Narmada near MAHESHWAR, passed alongside Asirgarh fort near Burhanpur and passing through Bahal went past Bhogavardhana (BHOKARDAN) via Ajanta caves, Bahal may perhaps be identified with Bahadā mentioned in an Ajanta inscription (Ghosh, 1967-8), but a late historical inscription gives its old name as Bahalapuri.

Bahal came to notice with the chance find of 685 pieces and five fragments of silver punch-marked coins

[3.1] in 1943 (Chakravarti, 1944). In 1949 the site was visited by the author, who brought to light the ancient site and collected NBPW [11.16] sherds, Sātavāhana black-and-red ware [11.6], microliths and black-painted red pottery which could be identified as Chalcolithic [4.14.6] after the excavation of NASIK. On behalf of the ASI the writer excavated the mound on a small scale in 1952 and once again in 1956-57 (*IAR* 1956-7, p. 17), bringing to light five Pds with breaks between Pd I and II and again between Pds III and IV.

Pd I had two Sub-pds, A and B, both Chalcolithic, overlying the Black Cotton Soil [9.1]. Sub-pd A was distinguished by a thick grey ware in the shape of the globular jar with a flared rim, reminiscent of the BRAHMAGIRI urn, bowl with flat base and incurved rim and handmade storage jar with incised oblique and criss-cross lines or dot-and-chain patterns and with bold applied decoration of finger-tips and female figurines of the fertility goddess. A few sherds of thinner grey ware had paintings in red ochre on the rim portion of the pot or on the knob of the lid shaped like a shallow bowl. This pottery is also met with in Pd III of DAIMABAD. Sub-pd I B produced fine red ware turned on the fast wheel. It was painted in black with a rich variety of designs—horizontal bands with hatched diamonds, triangles, ladders, concentric circles and criss-cross, parallel lines and antelope and horse (?); the last-mentioned pottery with animal paintings bears similarity with the DAIMABAD pot bearing a painted band of a procession of antelopes, leopard and a human being. A few sherds of lustrous red-slipped ware recalls the post-Harappa Lustrous Red Ware [11.9] of RANGPUR. The upper levels of this Sub-pd contained the carinated bowl and spouted vessel of the NASIK-JORWE type, but the typical burials of the Jorwe culture [4.14.6] with two or three urns placed horizontally mouth to mouth [12.4] were not met with at Bahal, nor the extended burials seen in the Chalcolithic levels at DAIMABAD and INAMGAON. The burnished grey ware found in Sub-pd I A and black ware with oblique lines painted in white continued in this Sub-pd. The other finds consisted of beads of terracotta, shell and paste, microliths of chalcedony, agate and jasper—mostly parallel-sided blades, sometimes serrated, and less frequently lunates and trapezes—and terracotta comb-like objects made out of sherds and bones. The limited use of copper was indicated by a shapeless lump of metal.

Pd II (c. 600-300 B.C.) marked a complete change in the life-pattern of the site with the emergence of iron and of the black-and-red ware with its variants in which the red was replaced by buff or cream. The ware had a highly burnished surface, and the bowl with featureless rim and the shallow dish were the common shapes. The shapes in the associated red ware of gritty core were the globular

jar and carinated *hāṇḍī*. In addition there were highly polished faceted beads of carnelian, jasper, crystal and opal and large cylindrical ear ornaments of agate with mirror-like polish. The iron objects were represented by spearheads, arrowheads, knives, daggers, sickles, etc., indicating an agricultural community living at the site and tilling the rich soil in the Tapti valley. The Pd II had three structural Sub-pds indicated by post-holes at short intervals, suggesting modest timber-built huts. Legged querns and pestles [6.19], of which a large number were found, and charred grains, probably rich and millet, pointed limitedly to the food-habits of the contemporary people.

Pd III (c. 300 B.C. to A.D. 100) had two Sub-pds. In Sub-pd A the variants of the black-and-red ware, abundant in the preceding Pd disappeared, but the main ware were contained alongside the NBPW and a gritty red-slipped ware with crackled surface, occasionally marked with graffiti [20.1]. Beads of agate, carnelian and crystal and bangles of shell were also found, as also a circular copper mirror [18.5] with handle and iron nails and bone points with tangs. A floor made of rammed pebbles with post-holes was the only structural relic, besides deep ring-wells [14.5]. Sub-pd B was characterized by a still more gritty red ware, but the technique of burnishing deteriorated in the local ware. The Red Polished Ware [11.23] made its appearance. Two-holed tiles [14.6.4], common to both the Sub-pds, together with iron nails, indicate the use of roofs with tiles fixed to wooden rafters by means of iron nails. Etched beads of carnelian were found. Votive tanks [12.11] also made their appearance.

With the end of Pd III the site was subjected to severe floods which left behind sterile deposits of river-sand in several bands. After a long gap of 1200 years the site was reoccupied, in Pd IV, during the Yādava and Muslim times (A.D. 1200-1700). The deposits of this Pd were found badly disturbed by subsequent pits. The pottery was crude and grey and red in colour. Medieval glazed ware and Celadon Ware [11.25], together with polychrome Bahmani bangles and stray coins, were indicative of the date of this Pd.

Pd V represented an occupation of the site during the hegemony of the Marathas in the 18th century. Remains of pottery conduit-pipes embedded in brickwork formed the main relic of the Pd, together with a masonry wall, attributed to the family of the Pawars, standing at the site above the surface level.

Chakravarti, S.N., 1944, in *Jour. Bombay Branch Royal Asiatic Soc.*, New Series, 20. Ghosh, A., 1968-68, in *Epigraphia Indica*, 36, 6, pp. 241-4—M.N. DESHPANDE

Bahalda¹, Dt Mayurbhanj, on the Barhai. Tools of Series II (Middle Palaeolithic [4.3]) including points, scrapers, borers, burins, blades, cores and flakes were

collected.

IAI 1958-9.

Bahalda², Dt Mayurbhanj, on the Khadkei. Tools of Series II (Middle Palaeolithic [4.3]) including points, scrapers, borers, burins, blades, cores and flakes were collected.

IAI 1958-9.

Bahalda³, Dt Mayurbhanj, on the Nesa. Tools of Series II (Middle Palaeolithic [4.3]) including points, scrapers, borers, burins, blades, cores and flakes were collected.

IAI 1958-9.

Baharia, Dt Shahjahanpur. Two copper implements a harpoon, a new type of sword and sherds of the OCW [11.5] were found. Trial excavations yielded a few potsherds mostly pale-red (ochrous) in colour. Among the main types were: vases with beaded rim and concave neck; globular vases with flared rim; vases with splayed-out featureless rim; and vases with out-turned externally beaded rim.

IAI 1966-7. *Purātattva*, 5, 1971-2, p. 42.

Bahe, Dt Sangli. Tools of the Middle and Late Stone (Middle Palaeolithic [4.3]) and Mesolithic [4.5] Ages.

IAI 1962-3.

Bahera Khurd, Dt Saharanpur. Late Harappa [4.10] and OCW [4.12] site.

IAI 1967-8.

Baheya, Dt Ranchi. So-called Asura site [14.4] yielding copper vessels, ornaments and a polished bronze dish.

Jour. Bihar & Orissa Res. Soc., 6, 1921, pp. 412-13.

Bahiri, Dt Birbhum. Black-and-red Ware [11.6.5] site.

IAI 1971-2.

Bahmni, Dt Mandla. Rich Upper Palaeolithic [4.4] site on the Banjer.

IAI 1960-1.

Bahmni Khera, Dt Gurgaon. PGW [11.14] site.

Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 126.

Bahnera, Dt Bharatpur. Kushan red and grey wares.

IAI 1971-2.

Bahni Theh, Dt Kurukshetra. SISWAL and late Harappa wares [11.4].

Suraj Bhan & Shaffer, J.G., 1978, in *Man & Environment*, 2, p. 68.

Bahola, Dt Karnal. PGW [11.14] site.

IAI 1960-1.

Bahor, Dt Jammu. Late historical pottery and Gupta terracottas.

IAI 1962-3.

Bahotra-ka-Kot, Dt Ghazipur. Black-and-red ware [11.6.3].

IAI 1963-4.

Bahrah Khurd, Dt Jind. Late Harappa [4.10] site.

Suraj Bhan & Shaffer, G., 1978, in *Man & Environment*, 2, p. 62.

Bahri, Dt Jaunpur. Sherds of the NBPW [11.16] were found.

IAI 1969-70.

Bahua, Dt Fatehgarh. NBPW [11.16] was found at Bahua, 22.5 km from Fatehpur on the Fatehpur-Banda

road.

IAR 1957-8.

Bahuddin Thed, (29°31'; 75°13'), Dt Hissar. Rang Mahal [11.24] site.

IAR 1967-8.

Bahukasiktaur, Dt Basti. NBPW [11.16] site.

IAR 1963-4.

Bahupura, Dt Saharanpur. Late Harappa site [4.10].

IAR 1964-5.

Bahurupa, Dt Dhule, on the n. bank of the Tapi, explored by the Prehistory Branch, ASI, which brought to light a considerable number of microliths (*IAR 1958-9*, pp. 22-4). Subsequently excavation confined to two trenches has revealed a 45 cm thick Chalcolithic deposit [4.14.6] largely disturbed by pits (*IAR 1959-60*, p. 34). The pottery comprises the typical Chalcolithic red and brownish ware bearing geometrical, animal and fish motifs in black, purple or chocolate colours. A shallow dish with bevelled rim, high-necked jar and lid are some of the important yields in the red variety, while a few specimens of burnished grey and black wares with the paring technique have also come to light along with a type of black and grey ware having vertical strokes and dots painted inside. The site has also yielded a few microliths on agate and chalcedony representing microblade cores, parallel-sided blades, tiny backed blades, crescents and awl points. The microliths and other materials available on the surface, i.e., fluted cores, simple and retouched blades, points, etc., and nodules and flakes and chalcedony, agate and some siliceous materials would indicate that Bahurupa was possibly a factory site for making microlithic tools.

—A. BANERJI

Bahyana, Dt Dhule. Microliths and Chalcolithic habitation remains [4.14.6].

IAR 1961-2.

Bahyand, Dt Dhule. Microliths (of unspecified nature).

IAR 1961-2.

Baidyapur (21°46'; 86°42'), Dt Mayurbhanj, in the valley of the Burhabalang in Sadar Subdivision, a small village on the slope of a high land formed of lateritic soil with a thick mantle of alluvium or loose earth on top. The occurrence of polished stone implements in the paddy-fields of the village was first reported in 1923-4 by P. Acharya (*ASI—AR 1923-4*, p. 100) and thereafter surface explorations by the Calcutta Univ. and the ASI have yielded from the site a large number of neolithic [4.6.4] artefacts in different stages of manufacture. The industry is particularly important because of its association with a coarse pottery. The tools are generally made of phyllite and consist of celts of various types, adzes and conical hammer-stones besides shouldered celts of rectilinear type, the latter demonstrating a cultural link with e. India [4.6.6] and s.-e. Asia. Two different tool-

making traditions, common to e. India, existed side by side. The first tradition marked by chipping and pecking over the entire surface and grinding restricted to the cutting edge only indicates an early stage of the Neolithic culture. The second tradition belonging to the later Neolithic complex consists of fully ground and polished tools with straight sides and trapezoidal or rectangular transverse section.

A trial dig at the site undertaken in 1961-2 by the ASI yielded a gritty, handmade red ware in association with the Neolithic implements. The sherds are mostly of vases with out-turned rim. In all its technical aspects the ware is similar to the Neolithic pottery of KUCHAI. Thus Baidyapur passed through a true Neolithic stage in which the basic traits of a food-producing economy, viz., agriculture, polished stone tools and pottery, were present.

Banerji, R.D., 1930, *History of Orissa*, Calcutta, 1, pp. 35-40. Ghosh, N.C., 1969, in *Jour. Oriental Inst.*, pp. 333-4 (for pottery).—S.K. MUKHERJEE

Baigar, Dt Varanasi. NBPW [11.16].

IAR 1958-9.

Bajinathpur, Dt Moradabad. PGW [11.14].

Lal, B.B., 1954 & 1955, in *AI*, 10 & 11, p. 138.

Baira Domuhwan, Bairadumhawan. Dt Varanasi. Upper Palaeolithic [4.4] site yielding blades, burins, parallel sided blades, blunted blades, points, scrapers, lunates, cores and flakes. See CHANDRAPRABHA VALLEY.

IAR 1962-3.

Bairagarh, Dt Bhopal. The w. slope of the sandstone hill near Bairagarh on the outskirts of Bhopal has several rock-shelters with paintings [13] and microlithic tools [4.5] comprising lunates and trapezes, besides fluted cores and flakes and traces of an inscription in shell characters.

IAR 1956-7.

Bairala, Dt Mirzapur. Black-and-red Ware [11.6].

IAR 1962-3.

Bairanattam, Dt Dharmapuri. Megalithic site with dolmens [4.17.9].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Bairat' (27°27'; 76°12'), Dt Jaipur, 66 km n. of Jaipur and 40 km w. of Alwar, with two inscriptions of Aśoka, one on an isolated boulder and the other on a hill called Bijak-ki-pahari the top of which is reached by a roughly flagged ramp. One of the inscriptions is addressed to the Buddhist community. A. Cunningham considered Bairat to be the capital of the Matsyas (*ASI—AR*, 6, 1873).

The Buddhist remains are located on two terraces on the Bijak-ki-pahari, the upper terrace with a brick monastery and the lower one with a brick sanctuary, both excavated by D.R. Sahni in the 30s of this century.

The sanctuary was thought by him to be a circular temple with a door in the e., enclosing another circular wall of wedge-shaped bricks, the intervening space serving as a procession path. The latter wall is 'made up of panels of brickwork alternating the octagonal columns of wood, which numbered 26 ..., the charred stumps of which ... have survived and double-pointed cramps found in the recesses in which the columns stood indicate that the latter were composed of two or more thin sections, joined to obtain the required thickness.' According to Mitra, 1971, p. 42, however, the two concentric circular walls enclosed a *stūpa*, now disappeared, so that the whole structure was a *stūpa* complex with the space between the circular walls serving as *pradakṣiṇā-patha*. The complex was at a later date enclosed by an oblong brick enclosure, its n., s. and w. walls touching the outer circular wall, the open space on the e. serving as a congregation hall. The complex is thus a prototype of the later rock-cut *caitya-grhas* of w. India.

Aśoka workmanship of the structure is not in doubt for apart from his two inscriptions fragments of one or more pillars of Aśoka in Chunar sandstone and a polished stone umbrella of Mauryan craftsmanship were found in the debris.

The upper terrace of the hill, approached by a broad staircase now disappeared, occupied a dilapidated monastery. Hidden within one of its walls was a small pottery jar with 36 silver coins, punch-marked [3.1] and Greek and Indo-Greek, indicating that the monastery continued in existence till at least A.D. 50. Eight of the punch-marked ones were wrapped in a piece of cloth [16.16]. The cloth is a rare find. Scientific examination has shown that 1 sq yard (8.36 sq m) of it would have weighed 3.303 oz. (85.893 g). It was woven from 20s and 16s yarns. The number of strands to 1 inch (25.4 mm) was 50 lengthwise and 34 breadthwise.

On the s. spur of the Bijak-ki-Pahari Sahni found a small fine chert flake (parallel-sided blade), the tall stem of a pottery dish-on-stand and an incuse coin. Rock-shelters [13], a microlithic core [4.5], an ovate and Lower Palaeolithic tools [4.2] were also found in the neighbourhood (IAR 1962-3).

Bairat figures on the distribution map of the NBPW [11.16] (AI, 1, 1946, p. 57). Renewed excavation of Bairat by N.R. Banerjee of the ASI revealed a succession of four Pds ranging in date from the late phase of the PGW [11.14] mixed with the NBPW, early centuries of the Christian era and, after a break, medieval (IAR 1962-3, p. 31).

Mitra, D., 1971, *Buddhist Monuments*, Calcutta. Sahni, D.R., no date, *Arch. Remains & Excavations at Bairat*, Jaipur.—A. GHOSH Bairat, Dt Varanasi. Black-and-red ware [11.6.4] and NBPW [11.16].

IAR 1961-2; 1962-3.

Bairgarh, Dt Varanasi. Rock-shelters with paintings [13] were discovered on the bank of the river Karamnasa.

IAR 1961-2.

Bairi, Dt Kanpur. NBPW [11.16].

IAR 1962-3.

Baisi, (Vayagigarhi), Dt Saharsa. Site with remains of a brick wall and yielding terracotta ring-wells [4.15], storage jars and terracotta ear-lobes, all characteristic of the Sunga period.

IAR 1965-6.

Baitalwadi, Dt Aurangabad. Microlithic [4.5] site.

IAR 1956-7.

Baithola, Dt Tonk. Microliths [4.5].

IAR 1958-9.

Bajekan, Dt Hissar. RANG MAHAL [11.24] site.

Silak Ram, 1976, unpublished thesis, Kurukshetra Univ.

Bajhera, Dt Aligarh. PGW [11.14] site.

IAR 1962-3.

Bajitpur, Dt Una. Late Harappa [4.10] and early historical site.

IAR 1970-1.

Bajra-Tiket, Dt Jaunpur. NBPW [11.16].

IAR 1962-3.

Bakal, Dt Saharanpur. Late Harappa [4.10] and OCW [4.12] site.

IAR 1967-8.

Bakanda-khera, Dt Agra. PGW [11.14] site.

IAR 1964-5.

Bakarka, Dt Saharanpur. OCW [11.5] and PGW [11.14] site.

IAR 1963-4.

Bakarganj, Dt Basti. Black-and-red ware and NBPW [11.16].

IAR 1963-4.

Bakraha, Dt Sangrur. PGW [11.14] site.

Suraj Bhan, 1975, *Excavation at Mitthul & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 124.

Bakraur (24°42'; 85°1'), Dt Gaya, 1 km e. of the Bodhi Gaya temple. A *stūpa* site on the Lilajan river (ancient Nairāṇjanā), visited by Cunningham in 1861-2, and excavated by K.M. Srivastava in 1974-5. The excavation revealed a *stūpa* built in three stages; the discovery of plaques of Buddha in *bhūmi-sparśa-mudrā* with the legend *Sujātā-grha* in characters of the 8th-9th century proves its traditional association with Sujātā. The first occupation of the site was fairly early as is evidenced by the discovery of dark-grey polished ware and a silver punch-marked coin [3.1].

Cunningham, A., 1871, *ASI—AR*, 1, p. 12.—K.M. SRIVASTAVA Bakresvar and Kopai valleys, Dt Birbhum. Chinpai and Giridangal in these river valleys yielded Middle and Late Stone Age (Middle Palaeolithic [4.3] and Mesolithic [4.5]) implements, the former comprising scrapers, points and blades of chert and red jasper and the latter represented by small blades, points, flakes and cores.

IAR 1961-2; 1965-6.

Bakreswar, Dt Birbhum. Lower Palaeolithic [4.2], Middle Palaeolithic [4.3] and Microlithic [4.5] site.

IAR 1962-3; 1965-6.

Bakrol, Dt Ahmadabad. Mesolithic [4.5] site.

IAR 1972-3.

Bakutra-I & II, Dt Banas-Kantha. Painted red ware and late historical ware.

IAR 1964-5.

Balaganahalli, Dt Kolar. Site with Black-and-red ware [11.15.3] and red wares and Megalithic stone circles [4.17.8].

IAR 1972-3.

Balaggam, Dt Gurdaspur. Early historical remains. See ACHAL-SAHEB.

IAR 1961-2.

Balajangamanahalli, Dt Dharmapuri. Late Stone Age (Mesolithic [4.5]) and Megalithic burial [4.17.9] site.

IAR 1969-70.

Balajigutta, Dt Hyderabad. A group of 35 stone circles [4.17.7] was noticed.

IAR 1958-9.

Balambid, Dt Dharwar. Mesolithic [4.5] site with tools made on quartz and occasionally on chalcedony and crystal. The dominant tool type is the point, other types being the burin, crescent, awl, etc.

Information from B. Narasimhaiah through A. Sundara.

Balamrapara. See VAGHELE and BALAMRAPARA.

Balana, Dt Ambala. Late Harappa [11.4] pottery and PGW [11.14].

IAR 1963-4. Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 123.

Balanapalli, Dt Dharmapuri. Megalithic burial [4.17.9] site.

IAR 1969-70.

Balanayanapalli, Dt Dharmapuri. Dolmenoid cists [4.17.9].

IAR 1965-6.

Baland (Baid Natha Kheda), Dt Rohtak. Early historical site.

Jour. Haryana Studies, 3, 1, p. 4.

Balapur-Khurd, Dt Chanda. Late Stone Age (Mesolithic [4.5]) tools.

IAR 1962-3.

Balarampur, Dt Bankura. Microliths [4.5].

IAR 1959-60.

Balasar (29°33'; 74°46'), Dt Hissar. Rang Mahal [11.24] site.

IAR 1967-8.

Balathal, Dt Udaipur. Microlithic and white-painted black-and-red ware [4.14.1] site in the Berach valley.

IAR 1962-3.

Balavarman, Dt Nalgonda. Megalithic [4.17.7] site.

Sreenivasachar, P., 1963, in *Arch. Bull.*, 11, p. 5.

Balayi, Dt Gurgaon. PGW [11.14] and early historical site.

Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.

Balbatti, Dt Gulbarga. Ancient mound.

Jour. Geological Surv. Hyderabad, 5, 1, p. 56.

Balchakra, Dt Gulbarga. Megalithic [4.17.8] site. It also has rock paintings [13].

Jour. Geological Surv. Hyderabad, 4, 1, p. 188.

Baldana, Dt Dhule. Chalcolithic habitation and burial remains [4.14.6].

IAR 1961-2.

Baleguli, Dt Dharmapuri. Cist burials [4.17.9].

IAR 1966-7.

Baleni, Dt Meerut. The site, 5 km s. of Pura, yielded sherds of a fine grey ware, seemingly of the PGW [11.14] assemblage, and NBPW [11.16].

IAR 1958-9. Sharma, R.P., 1976, in *Arch. Congress & Seminar 1972*, Kurukshetra.

Baleri, Dt Ujjain. Early historical site.

IAR 1971-2.

Balganur, Dt Bijapur. Chalcolithic [4.14.8] site. See ALMEL.

IAR 1959-60.

Balhane, Dt Dhule. Chalcolithic [4.14.6] site with microliths and black-painted red and burnished grey wares.

IAR 1962-3.

Baliana, Dt Rohtak. PGW [11.14] was found at Baliana-I and pre-Harappa [11.2], black-and-red ware, PGW and Black-slipped [11.13] Ware at Baliana-II.

Jour. Haryana Studies, 3, 1, p. 4. Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 125.

Baligarh, Dt Darbhanga. NBPW [11.16] together with terracottas of the 2nd-1st century B.C.

IAR 1954-5.

Balirajgarh, Dt Darbhanga. Situated 80 km n.-e. of Darbhanga and 27 km n.-e. of Madhubani (26°21'; 86°7'); excavated in 1962-3, 1972-3 and 1974-5. The defence wall as excavated underwent three phases of construction or repairs. The core of the fortification consisted of mud brick with burnt-brick encasement, the outer one four times the width of the inner. In the second phase a concrete ramp was built against the inner face. The third phase witnessed further reinforcement of the ramp in the shape of a 3 m high platform of earth mixed with potsherds built against the inner face of the fortification as protection against floods. The fort wall originated in the 2nd century B.C., with NBPW sherds in the pre-defence deposits. The cutting in the habitation area revealed two Pds, the NBPW level not being reached due to subsoil water. Pd I revealed a residential building with a well of wedge-shaped bricks and a ring-well [14.15]. Terracotta animal and human figures [17], and beads of precious stones, mother goddess figures [12.6], copper antimony rods [18.1] and an iron crucible [16.4] were among the finds. Pd II covered a deposit about 1-60 m thick. A brick wall of the Pd was exposed.

IAR 1962-3, p. 3.—B.P. SINHA

Balitha, Dt Surat. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1963-4.

Baljor nullah, Dt Santal Parganas. Microliths [4.5].

IAR 1961-2.

Balleri, Dt Kolar. Site with black-and-red and red wares and Megalithic remains [4.17.8].

IAR 1972-3.

Balligave, Dt Shimoga. Early historical site with brick structures.

Karnataka Bharati 8, 2, pp. 11-12.

Ballolli, Dt Bijapur. The site yielded painted black-on-red pottery characteristic of the Chalcolithic cultures of the upper Deccan [4.14.6] and a thick grey ware similar to that found at BRAHMAGIRI and BAHAL in association with microliths.

IAR 1957-8.

Balochia, Dt Ganganagar. Microliths, painted Rang Mahal [11.24] Ware, carnelian beads and a large number of tiles with finger and reed impressions from Balochia-1 and grey ware, PGW [11.14] and Rang Mahal Ware from Balochia-2.

Unpublished.

Ballu Khera, Dt Chittaurgarh. Microliths. See KURIAS.

IAR 1957-8.

Ballur, Dt Mysore. Black-and-red [11.15.3] and Russet-coated Painted [11.22] Wares.

IAR 1961-2.

Balor, Dt Rohtak. Early historical site.

Jour. Haryana Studies, 3, 1, p. 7.

Balpur¹, Dt Bilaspur. Two flat celts of copper [4.11].

Information from S. Asthana.

Balpur², Dt Raipur. Balpur on the Mahanadi yielded coins of different periods. The pottery, in which red ware predominates, showed an occasional sprinkling of carinated dishes with inverted firing commonly found at the Sātavāhana site and ridged *hāṇḍis* having rounded base similar to those of about the 7th century from the SIRPUR excavation. Amongst the sophisticated forms was a small flask with a large flaring rim.

IAR 1955-6.

Balsana, Dt Dhule. Artefacts ascribable to a stage succeeding the Middle Stone Age (Middle Palaeolithic [4.3]) but preceding the Late Stone Age (Mesolithic [4.5]) were found at the site. Chalcolithic habitation and burial remains [4.14.6] were also discovered. The mound is capped by a lime-like deposit closely resembling what forms an embankment at DAIMABAD.

IAR 1964-5.

Balu, Dt Jind. Ceramic complex comprises: early SISWAL, Siswal, mature Harappa [11.3] and late Harappa [11.4] wares. In addition inlaid Harappa stone beads, terracotta toy-cart frames, wheels [16.9], triangular and oval cakes [6.27] and faience bangle pieces were also found.

Suraj Bhan & Shaffer, J.G., 1978, in *Man & Environment*, 2, p. 62.

Balvand, Dt Dhule. Chalcolithic habitation [4.14.6] site with microliths and black-on-red and burnished grey

wares. Chalcolithic burial remains were also found.

IAR 1960-1.

Bamandih, Dt Midnapur. Early Stone Age (Lower Palaeolithic [4.2]) tools and microliths [4.5].

IAR 1961-2; 1964-5.

Baman-Theri, Dt Ganganagar. Rang Mahal Ware [11.24], terracotta plaque, terracotta toys, a pendant of banded agate, pottery moulds [16.10], faience bangles, a small terracotta ball and carved brick.

Unpublished.

Bamboo Flat, Dt Great Andaman. Kitchen-midden [14.11] site near Port Blair.

Lapicque, L., 1884, in *Bull. de la Societe d'Anthropologie de Paris*, pp. 359-60.

Bamdod, Dt Dhule. Microliths [4.5] were found together with the black-and-red pottery of the early historical period.

IAR 1958-9.

Bamhani, Dt Mandla. Middle (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) factory and camping site also yielding the Upper Palaeolithic [4.4] flake-blade industry.

IAR 1960-1; 1964-5.

Bamini, See TARRA.

IAR 1956-7.

Bamla, Dt Ranchi. Dolmens and microliths [4.5].

IAR 1960-1.

Bamnauli, Dt Meerut. PGW [11.14] and NBPW site on the right bank of the Hindon.

IAR 1967-8. Sharma, R.P., 1976, in *Arch. Congress & Seminar 1972*, Kurukshetra.

Banagarh, Dt Varanasi. Painted rock-shelters [13] on the bank of the Dt Karamnasa.

Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad.

Banahalli, Dt Kolar. The site lies in the upper reaches of the Palar river and probably represents the largest Neolithic [4.6.9] Megalithic [4.17.8] settlement in s. India. The terrace marks an important open-air station of the Neolithic folk, using a variety of tools, viz. axes, axe-hammers, chisels, digging-stick weights, hoes, grinders, etc. Pale and burnished grey ware and a coarse red ware were also found. The Megalithic Black-and-red Ware [11.15.3] and iron objects were found in the upper part of the deposit. Overlooking the terrace are several rock-shelters [13] yielding a large quantity of Neolithic handmade pottery and stone implements.

IAR 1967-8; 1972-3. Maloney, C., 1976, in Stein, B., ed., *Essays on s. India*, Delhi.

Banaoda, Dt Ujjain. Early historical site.

IAR 1971-2.

Banarasia, Dt Gorakhpur. Habitation site with brick structures and fragments of grey ware, sherds of red ware, copper Kushan coins [3.1], etc.

IAR 1961-2.

Banasandra hill range, Dt Tumkur. At the foot of the Banasandra hill range a Lower Palaeolithic [4.2] site was discovered and artefacts of the Abbevillian and Acheu-

lian techniques picked up.

IAR 1955-6.

Ban Asuria, Dt Bankura. Bar celts of the Copper Hoard complex [4.11].

Das Gupta, P.C., 1966, *Exploring Bengal's Past*, Calcutta.

Banavasi, Dt N. Kanara, near Sirsi (14°36'; 74°54'), one of the ancient capitals of Karnataka, the mound enclosed by a huge brick fortification. The site had yielded coins of Cūṭukādanda and Muḍānanda along with pot in types of Yajñasri Śātakarṇi. A medieval temple with some Kadamba features stands on the bank of the Varada. A number of mounds spread over 1 sq km, some of them with Śātavāhana brick structures, are noticeable. The Dept of Ancient Indian History and Arch., Univ. of Mysore, in collaboration with the state Dept of Arch. undertook excavation here (IAR 1970-1, p. 29). The original brick (40 × 8 cm) fortification on a rubble foundation, surrounded by a deep moat and the river, is seen to have undergone repairs at least twice with brickbats and large laterite blocks. Of the mounds existing on the n. and the s.-w. of the Madhukēśvara temple the one locally known as Donigudda ('boat mound') was taken up for digging. This (BNV-1) was excavated down to the natural soil and exposed an apsidal temple belonging to the Śātavāhana period. The building consists of parallel walls with a square platform of baked brick (43 × 22 × 7 cm). A number of terracotta tiles from the floor level indicate that the floor was paved with them. The existence of a *caitya* is mentioned by Hiuen Tsang who visited the site in the 7th century.

BNV-2 has revealed the remains of a wall built in typical large-sized Śātavāhana brick along with sherds of Russet-coated Painted Ware [11.22], imitation Rouletted Ware [11.21] and Black-and-red Ware [11.15.3] assignable to the first half of the 1st century A.D. Almost similar finds have been made inside the fortification to the n. of a Jaina temple. The cutting (BNV-3) taken down to the natural soil was confined to a small area of 2 × 2 m bringing to light the remains of an ancient temple with a pedestalled *linga* to the n.-w. of BNV-3 adjacent to the brick fortification. This has revealed a square inscribed pillar of granite describing the victory of Mṛgeśavarman over the Pallavas and also mentions the names of Kākusthavarman, Śāntivarman and Mṛgeśavarman of the Kadamba dynasty.

Another brick *caitya* measuring 22.5 × 12.5 has been exposed on the river bank. Below the structure belonging to later than the 1st century have been found sherds of imitation Rouletted Ware and Russet-coated Painted Ware.

— A. BANERJI

Banawali, Dt Hissar, 15 km n.-w. of Fatehabad (29°31'; 75°30'), on the left bank of a storm-water drain, probably an old bed of the SARASVATĪ, with the ruins extend-

ing a quarter sq m and attaining a height of about 10 m. Excavation was undertaken by the Dept of Arch., Haryana, during 1974 to 1977 revealing three Pds.

Pd I (c. 2500-2300 B.C.) is indicated by the existence of well-planned houses made of kiln-burnt and moulded brick. Within these structures are found a number of oval and circular hearths as also ovens and circular silos, which might have been used either as storage jars or for the disposal of refuse. In technique, decoration and general appearance the pottery may be divided into two broad groups: one is thin and light in fabric with pink or buff colour and is elaborately painted in black. White pigment has been used to give prominence to the principal motifs which include geometric, stylized, abstract and realistic designs. The irregular markings noticeable on the sherds may be due to their having been manufactured on slow wheel. The shapes comprise the vase and jar. The second group represents a finer variety of pottery marked by a superior texture and surface treatment. It is probably made on fast wheel and is comparable with the Harappa ceramics [11.3] in fineness. The types include the dish-on-stand, basin, trough, jar, vase and bowl of various shapes and sizes, mostly painted in black. The pottery assemblage is akin to that of SOTHI/KALIBANGAN I. The small finds comprise beads of gold, semiprecious stones, terracotta and steatite and bangles made of clay, shell, faience and copper. A blade of chalcedony has also been found.

In Pd II (c. 2300-1700 B.C.), a well-planned fortified township laid in the typical Harappa [4.9] chess-board pattern was established. It consists of two adjacent fortified areas— one may have been for the ruling class and the other for the common people. The area meant for the common people is subdivided into house blocks, with broad n.-s. thoroughfares, cut at right angles and connected by e.-w. lanes. A defence wall has been traced to a length of 105 m with a height of 4.50 m and a thickness of 6 m. This wall runs n.-s. across the mound. A narrow opening possibly meant as a small door for communication between the two parts of the town is seen in the middle of the wall. The opening is guarded by a massive square bastion built against the defence wall. A drain-like structure apparently intended to let out rainwater, as also three major roads 5.4 × 5.2 × 4.6 m in width and 1.5 m wide e.-w. lanes, have been exposed, with well-planned houses of mud brick comprising rooms, store, kitchen and toilet built on both sides of the roads and lanes. The houses generally have floors of rammed earth, mud walls plastered with husk or cowdung and flat earthen roofs on reed cushion supported by wooden beams and rafters. The bricks used for houses are of small size (6.5 × 13 × 26 cm, 7 × 14 × 28 cm, 7.5 × 15 × 30 cm or 8 × 16 × 32 cm) as against the larger ones (10 × 20 × 40 or 11 × 22 × 44 cm) used for

security and defence purposes. A pottery jar found inside the toilet suggests its use as a wash-basin to drain out the used water through a brick channel into a refuse jar placed outside on the road. At all the levels a number of hearths and *tandurs* have been unearthed. Several jars are laid on the floor presumably to store raw or cooked food or other miscellaneous items. The red ware is typically Harappa and has a sophisticated finish. The shapes comprise the dish-on-stand, fruit-stand, S-shaped jar, storage or refuse jar, perforated jar, vase, cooking *hāṇḍis*, beaker, basin, goblet, chalice cup, handled cup, etc. They are painted with animal and floral designs. It is noteworthy that the Pre-Harappa and Harappa pottery co-occurs throughout. Stone tools include long and short blades of chert or other stones. Weights [6.29] of cubical shape and gamesmen made of stone, ivory and bone, gold beads, copper/bronze arrows, spearheads, razor blades, chisels, fish-hooks, beads, rings, bangles, anti-mony rods [18.1], wires and hair pins are among the other finds. Another remarkable find is a copper ornament covered with gold foil. Beads of banded agate, topaz, lapis lazuli, quartz, carnelian faience, shell and ivory; bangles and rings of clay, bone, shell and ivory; terracotta animal figurines; and inscribed seals and sealings with the depiction of various animals are objects of special interest. Charred barley grains, animal bones and fish-hooks are indicative of the dietary.

Pd III (c. 1700-1500/1450 B.C.) represents the BARA ware culture, the remains of which are traceable in the pits cut into the Harappa levels of the mound. The ceramics of Pds II and III are different from each other in respect of fabric, slip, potting technique and painting, though certain Harappa traditions continue in pottery, terracotta nodules and cakes [6.27]. The excavation makes it clear that the Harappa brought with them their mature and well-developed traditions and lived side by side with the earlier residents. The BARA ware may be termed as post-Harappa or at best a late contemporary of the Harappa.

Bisht, R.S., 1976, *Banawali: a Look Back into the pre-Indus & Indus Civilizations*, Govt of Haryana: 1977, *Harappa Culture in Panjab*, paper read at the Seminar at the Indian Institute of Advanced Study, Simla, 1978, in *Man & Environment*, 2, pp. 86-8. —A. BANERJI

Banbana, Dt Ujjain. Historical site.

IAR 1971-2.

Banda¹, Dt Hazaribagh. Paleolithic handaxes [4.2].

IAR 1960-1.

Banda², Dt Sagar. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1963-4.

Banda³, Dt Varanasi. Black-and-red ware [11.6.3] and NBPW [11.16].

IAR 1962-3.

Bandahalli, Dt Mysore. Polished stone axes [4.6.9] and Megalithic cist burials [4.17.8].

IAR 1961-2.

Bandamtam, Dt Darjeeling. A series of Megalithic monuments was found. Mention may be made of a large hall with walls built of angular stones piled up without any mortar or cementing material. A chipped Neolithic [4.6.4] industry analogous to the chipped stone industry of s.-e. Asia was also found.

IAR 1966-7.

Bandarhala, Dt Raichur. Megalithic [4.17.8] site.

Karnataka Bharati, 6, 1, pp. 64-75.

Bandarkola, Dt Santal Parganas. Palaeoliths [4.2], scrapers of Series II (Middle Palaeolithic [4.3]) and microliths [4.5].

IAR 1960-1.

Bandarpada, Dt Dhule. Microliths [4.5].

IAR 1958-9; 1960-1.

Bandharpada, Dt Dhule. Microliths (of unspecified nature).

IAR 1959-60.

Bandi-Atmakur, Dt Kurnool. Handaxes [4.2] and a few flakes were found.

IAR 1959-60.

Bandi-Harlopur, Dt Raichur. Neolithic [4.6.9] site.

Arch. Studies, 3, p. 170.

Bandol, Dt Seoni. Large choppers [4.2], discoidal and irregular cores and scrapers on large flakes were found, but there was no bifacial handaxe or cleaver nor any tool of Series II (Middle Palaeolithic [4.3]).

IAR 1959-60.

Bandoli, Dt Gulbarga. Factory site on the right bank of the Krishna yielding a large number of blade tools [4.4].

IAR 1965-6.

Bandua, Dt Ranchi. A flat copper celt [4.11].

Patna Museum collection.

Bandur, Dt Kolar. Megalithic stone circles [4.17.8] and menhirs.

IAR 1972-3.

Banehra, Dt Kurukshetra. Banehra yielded late Harappa ware [11.4] and PGW [11.14], while BANEHRA-1 and -2 are late Harappa sites comparable to MITATHAL II B.

IAR 1966-7. Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 124.

Baneswar Danga, Dt Burdwan. Chalcolithic [4.14.4] site on the Brahmani, a tributary of the Bhagirathi.

IAR 1972-3.

Bangalore, Dt Bangalore. Mesolithic [4.5] and early historical site yielding a hoard of Roman silver coins [3.1].

Seshadri, M., 1956, *Stone using Cultures of Pre- & Proto-historic Mysore*, London, pp. 33-4.

Banganga valley, See BEAS-BANGANGA VALLEY.

Bangaon¹, Dt Bhagalpur. An extensive mound yielding remains of a large *stūpa* with some monastic buildings attached to it. Punch-marked silver coins [3.1], a gold leaf, a broken copper bangle and carnelian beads were

discovered in an earthen vase inside a small brick chamber of the *stūpa*. The finds are assigned to a period between the 2nd century B.C. and 2nd century A.D.

Kuraishi, M.H., 1931, *List of Ancient Monuments Protected under Act VII of 1904 in the Province of Bihar & Orissa*, ASI, New Imperial Series, 51, p. 203.

Bangaon², Dt Damoh. Lower Palaeolithic [4.2] site.

IAR 17, pp. 5-36.

Bangaon³, Dt Dhule. Tools of Series II (Middle Palaeolithic [4.3]).

IAR 1958-9.

Bangargatti, Dt Gulbarga, Megalithic [4.17.8] site.

AR Hyderabad Dept. of Arch., 1933-4, p. 7.

Bangarh, Dt W. Dinajpur, on the e. bank of the Punarbhaba, situated in the c. part of the fertile track of land between the Ganga and the Himalayas. Anciently known as Devikotā, Umāvana, Koṭivarṣa Bāpapura, Śonitapura, etc., it is traditionally regarded as the capital of the demon-king Bāpa. The Univ. of Calcutta under K.G. Goswami undertook excavation here during 1938 to 1941. The Rajbari mound, measuring 106 m n.-s. and 91 m e.-w. and surrounded by a brick fortification wall, was seen to have five occupation levels (called 'strata' by the excavator), dating from the 3rd century B.C. to medieval times. While the lowest levels were not touched, Stratum V, the lowest and earliest excavated one, had a ring-well [14.15] 74 cm in diameter, as also stone beads, silver punch-marked and copper cast coins [3.1] and terracotta figurines. Particular mention may be made of the NBPW [11.16], associated with which were the handled jug, dish with curved or splayed-out rim, pan with ring-handle, jar, bowl and narrow-mouthed jar with incised lines.

The limited excavation of the next upper Stratum IV, exposed a wall, 4.7 m long, and a cess-pit, 1.7 m sq, without any outlet. There were other walls too and a 30 cm wide drain for the discharge of refuse water into a large pottery jar. Grey ware, red-slipped ware and, limitedly, polished black ware occurred in various shapes such as the vase, squat wide-mouthed vessel, dish with splayed-out and curved rim, cup and saucer. There were crucibles [16.4], silver and copper punch-marked and uninscribed cast coins, terracotta plaques with female figurines, terracotta sealings with early Brāhmī legends and beads of various materials, some of them spherical with white bands of net design. Everything points to the 2nd-1st century B.C. as the date of the stratum.

In Stratum III, dated to the Gupta times, there were some damaged walls of structures too small to be residential and perhaps used for storage. One house (4.8 × 2.9 m) to the n. of a 43.2 m long wall may have been a residential building. The roofing material is indicated by a large number of tiles [14.6.4] with a pair of holes in each. In one of the trenches the plan of three long walls (19 m e.-w., 17.5 m n.-s. and 18.3 m e.-w., each 4 cm

thick, enclosing an extensive area was encountered. There were traces of lime-and-surkhi floor. An interesting structure was an almost circular basket-shaped *kunḍa*, 1.3 to 1.6 m in diameter, gradually narrowing down to a hollow rectangle. Pottery finials, a peculiar round-bottomed pottery vase, red and buff sherds decorated with a conventional lotus alternating with conch-shell and flower were some of the finds. A large number of pots like the vase, spouted jug, cooking pot, saucer, spouted cup, lid with stamped and impressed designs and a narrow hollow object, probably a musical instrument, terracotta human and animal figurines, copper and ivory sticks [18.1], iron implements, stone beads, etc., constituted the other interesting finds.

In one of the trenches of Stratum II there was an ornate brick *kunḍa* and a pillared hall, designed as a hollow cross within a square, each side measuring 15.5 m, the cross leading to four rooms, each 4.3 m square, and having a pit or *kunḍa* of the shape of an ornamental lotus with 16 incurved petals, built of finely rubbed bricks. The *kunḍa* had four stone pillar-bases around it and at its centre was an octagonal hollow structure, less than 1 m in diameter, with a pottery pipe for leading water into a cess-pit outside through an underground drain. A large number of decorative bricks bearing human and animal (including bird) figurines, besides flowers and foliage—all indicate the religious character of the building and its Pāla age. In another trench was exposed the foundation of temple-like structure.

To the w. of the mound was found the city-wall with successive stages of construction. Brick-built residential buildings with pavements, sometimes of bricks-on-edge and ring-wells with rope marks at the top and with a pavement all round having depressions for holding pitchers, were noteworthy. Some of the larger houses had massive walls and octagonal stone pillars to hold the roof. This was the most prosperous period of the life of the city.

Stratum I, medieval, had poor buildings, which nevertheless show a continued occupation of the site.

Goswami, K.G., 1948, *Excavations at Bangarh (1938-41)*, Calcutta.

Bangasara, Dt Amreli. Late historical site.

IAR 1969-70.

Banger, Dt Ujjain. Early historical site.

IAR 1971-2.

Bangla Motta Paramba, Dt Cannanore. Rock-cut Megalithic cave with stone circles [4.17.10].

AI, 12, 1956, p. 93.

Bangriposi (22°9'; 86°32';), Dt Mayurbhanj. Lower Palaeolithic [4.2] site. See KULIANA.

Bangura-Srikanthanahalli, Dt Bidar. Middle Palaeolithic [4.3] site.

Karnataka Bharati, 11, 3.

Bani, Dt Hissar. Pre-Harappa [4.8] and PGW [11.14]

site.

Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 123.

Baniakheri, Dt Ujjain. Chalcolithic [4.14.5] site.

IAR 1971-2.

Banimilia Bahera, Dt Mirzapur, in the Jangal Mahal area in Tahsil Chunar, a Megalithic [4.17.3] site spread over an extensive area, excavated by A.K. Narain and his assistants of the Banaras Hindu Univ. (IAR 1962-3, p. 38), bringing to light four types of monuments: Type 1, cairns made up of heaped-up stone rubble with a single or multiple capstone; Type 2, cists enclosed by a cairn; Type 3, cairn circles; and Type 4, chamber-type tumuli of dressed stone having a single or multiple capstone and enclosed by a heap of rubble stone. Of the five megaliths that were excavated three belonged to Type 4, and one each to Types 1 and 2. The longer axes of the cists and chambers, oriented e.-w., is broader and higher on the w. than on the e. Ill-fired dull-red ware sometimes with a red-slip, overfired red ware, black-slipped ware and black-and-red ware are the important pottery types. Excepting one, no other megalith contained any skeletal material.

Megalith-1 (Type 4) was a chamber-type tumulus of dressed stone, the chamber being almost semicircular. It yielded a few sherds of black-slipped and dull-red ware. There were also a few microliths and a large number of waste chips at the bottom of the chamber.

Megalith-2 (Type 1) had dull-red ware. On the underlying black compact soil were found some microliths.

In Megalith-3 (also of Type 4) a layer of pebbles mixed with mud was found below the chamber. The e. side of the chamber consisted of a single upright slab with a support of two courses of masonry. In the deposit was found pottery of dull-red ware.

Megalith-4 (again of Type 4) had a large chamber 2.54 × 0.67 m) and a slope from w. to e. The finds included sherds of dull-red ware, black-and-red ware and overfired red ware and a few bone fragments from inside the chamber.

Megalith-5 (Type 2) was a cist on the rock-shelter with a cairn circle standing on two upright stone slabs on the n. and s. sides with a single piece of orthostat in both e. and w. A few sherds of dull-red ware were obtained from the deposits.

Excavation in the habitation area yielded sherds of ill-fired dull-red ware, overfired red ware, black-slipped ware and black-and-red ware

—A. BANERJI

Baniani, Dt Rohtak. Early historical site.

Jour. Haryana Studies, 3, 1, p. 4.

Baniya Beri, Dt Pachmari. Painted rock-shelter [13] occupied during the Mesolithic [4.5] period as evidenced by the find of microliths.

Lal, B.B., 1950, in *Archaeology in India*, Delhi. Wakankar, V.S., & Brooks, R.R.R., 1976, *Stone Age Painting in India*, Bombay.

Banjara Barda, Dt Ujjain. A few fluted cores of chalcedony were found.

IAR 1956-7.

Banjari, Dt Ujjain. Chalcolithic [4.14.5] site.

IAR 1971-2.

Banjartola, Dt Jabalpur. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1964-5.

Bankal, Dt Raichur. Port-holed cists [4.17.8] and Russet-coated Painted Ware [11.22].

AI, 4, 1947-8, p. 308.

Bankalgi, Dt Bijapur. Chalcolithic [4.14.8] site. See ALMEL.

IAR 1959-60.

Bankat, Dt Banda. Middle Palaeolithic [4.3] implements were obtained from the gravel bed of the Paisuni river. The assemblage includes blades, burins, points, side-scrapers, flakes and cores. The presence of the Levallois technique [16.15.1] is a noteworthy feature of the industry.

Mitra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad.

Bankat-Bhikharirampur. See GANGA VALLEY.

Bankatha, Dt Azamgarh. NBPW [11.16] site.

IAR 1961-2.

Banke-Siddha, Dt Banda. A factory site of the Middle Stone (Middle Palaeolithic [4.3]) Age in a valley near the hill of Banke-Siddha.

IAR 1961-2.

Bankey Lal-ji-ka-Pura, Dt Allahabad. Kushan period settlement.

IAR 1969-70.

Banmurcha, Dt Deoria. Defensive walls.

IAR 1962-3.

Bankotgi, Dt Bijapur. Early historical site.

IAR 1959-60.

Bannur, Dt Prakasam. Early historical site.

IAR 1971-2.

Banosi, Dt Bijapur. Microliths [4.5].

IAR 1962-3.

Bans, Dt Allahabad. Late Stone Age (Mesolithic [4.5]) site.

IAR 1963-4.

Bansen, Dt Chittaurgarh. White-painted black-and-red ware [11.6.2] site in the Wagan valley.

IAR 1956-7; 1962-3.

Bansi, Dt Deoria. NBPW [11.16] site.

IAR 1962-3.

Bansi-Sonari, Dt Basti. Habitation site with brick structures, ring-wells [14.15], potsherds and terracotta figurines probably of Kushan period.

IAR 1960-1.

Bansjore, Dt Ranchi. Microlithic blades, flakes and cores [4.5]

IAR 1960-1.

Bansketia, Dt Purulia. Microliths [4.5].

IAR 1959-60.

Banspal, Dt Mayurbhanj. The site on the river Son yielded Series I (Lower Palaeolithic [4.24] tools.

IAR 1957-8.

Bansra, Dt Birbhum. Black-and-red ware [11.6.5] site.

IAR 1967-8.

Banthali, Dt Tonk. Site on the Banas with Series I (Lower Palaeolithic [4.2] tools and black-and-red ware [11.6.2].

IAR 1958-9.

Banthra, Dt Lucknow. PGW [11.14], NBPW [11.16] and Black-and-red ware.

IAR 1967-8.

Banvali, Dt Bangalore. Megalithic [4.17.8] site yielding a large, four-legged terracotta vessel.

Seshadri, M., 1956, *Stone-using Cultures of Pre- & Proto-historic Mysore*, London, p. 60.

Banya-Khedi, Dt Shajapur. Malwa Ware [11.10] and white-painted black-and-red ware [11.6.2].

IAR 1960-1.

Banzari Ghat, Dt Morena. Microliths [4.5] from the banks of the Chambal.

IAR 1972-3.

Bapanattam (Irula banda Bapanattain), Dt N. Arcot. Megalithic [4.17.9] site with dolmens. Excavation yielded mostly pottery and many-legged sarcophagus troughs', [12.9] but few iron implements. Some of the pottery was highly ornamented 'with a chain pattern in festoons'. On one pot was found some writing.

Indian Antiquary, 10, 1881, p. 97. Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Bapperga. See DON RIVER.

Bara (30° 17'; 76° 47'), Dt Rupnagar (formerly in Dt Ambala), located 6 km s.-e. of Ropar. The mound here, approximately 550 m n.-s. and 300 m e.-w., was found in the wake of the discovery of Harappa culture [4.9] at ROPAR. Some exploratory trenches were laid here in 1955 (*IAR 1954-5*, p. 9) and again in 1971 by the author on behalf of the ASI. The 4 m thick accumulation here reveals a single culture throughout, although the deposit has been divided into lower, middle and upper levels.

The site is extremely rich in a distinct class of pottery. Made of well-levigated clay, the pottery is wheel-turned and possesses a firm and consistent texture. It is self-slipped or slipped with a brown-coloured clay which gets burnt to shades of brown-red. Designs are either painted in black or chocolate-brown or are incised with wooden points or brushes. A third method of ornamentation consists of drawing lines by a blunt-edged object on the smooth pot surface before firing, so that the design drawn acquired a burnished appearance when burnt. This method has been followed even by the Harappans in this region.

Some of the basic pottery types bring to mind Indus parallels, such as the dish-on-stand, large basin or bowl with flaring sides and large jar with a bulging convex pro-

file, all possessing a thick and sturdy section. Parallels in thin-sectioned ware are not close and only a general resemblance is seen in the small round jar with disc base or in elongated convex-profiled bottle. There are however certain features in these shapes where the correspondence breaks down; for instance, most of the Bara ware is embellished with painted or incised patterns, while a large proportion of the Harappa Ware [11.3] is plain. The stem of the Bara dish-on-stand is generally short and wide, as distinct from the long and slender stem of the Harappa counterpart. The long stem of Bara has a projecting ledge below the dish. Moreover the sloping or 'drooping' rim of the dish, often painted, is another Bara characteristic.

Other differentiating Bara features in the otherwise parallel shapes are the open base of the basin, incised designs on the interior sides of the basins and pedestal base of large bowls and dishes. Besides, shapes that are popular in mature Harappa levels are missing at Bara. Some of these are the Indus goblet with a pointed base, wide-mouthed large storage jar with concave profile above the base, flat dish (*thālī*) with flaring sides, large perforated jar, S-profiled jar and cup with perforated handle. On the other hand among diagnostic shapes or features of the Bara pottery are: the large bulbous jar with long neck and flaring rim, jar with collared rim, the body being bulbous or bluntly carinated at the belly, cooking utensil or water-jar incised on shoulder and rusticated at the bottom with 'honeycombed' ridges, brush-made spirals or fingered patch-work—all executed in Wet Ware technique. Some of the shapes that are common in the Harappa and pre-Harappa [11.2] pottery, such as the carinated dish with flaring and externally concave sides, beaker with restricted base, knobbed lid and lid with out-turned rim, often painted with single or double arc, are also found at Bara.

Among the painted motifs common with the Harappa may be named 'nets' of different shapes, fish, tree, multiple wavy lines and chequer-board pattern. Conversely such characteristic Harappa designs as intersecting circles, horizontally drawn opposed loops enclosing cross-shaped motif, *pipal* leaf, peacock and fish-scales are absent in the Bara paintings.

Wavy, zigzag or looped lines form a basic element both in painted and incised Bara decoration. A multiplicity of designs is obtained by combinations of horizontal grooves and wavy, zigzag or criss-cross incised lines. Characteristic among the painted motifs are: 'horn' or 'how'-like curve crowned by an arrowhead or some other motif; opposed triangles or semicircles; willow leaves in vertical or horizontal series; parallel wavy lines enclosing 'eyes' or lozenges; hatched 'net'; loops with humps surmounted by lines; grouped triangles; squares or rectangles with alternate hatching in different direc-

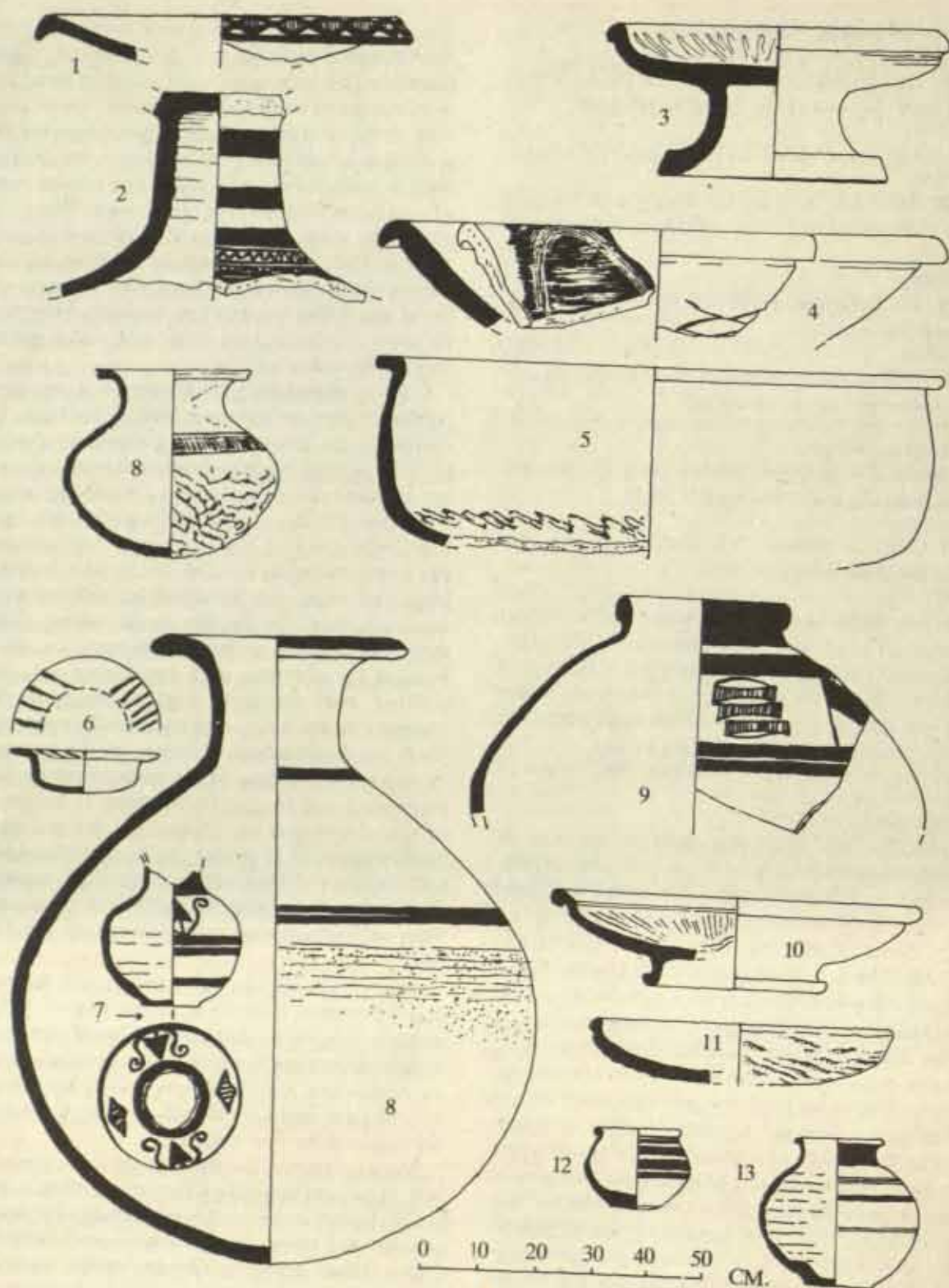


Fig. 5. Bara pottery types.

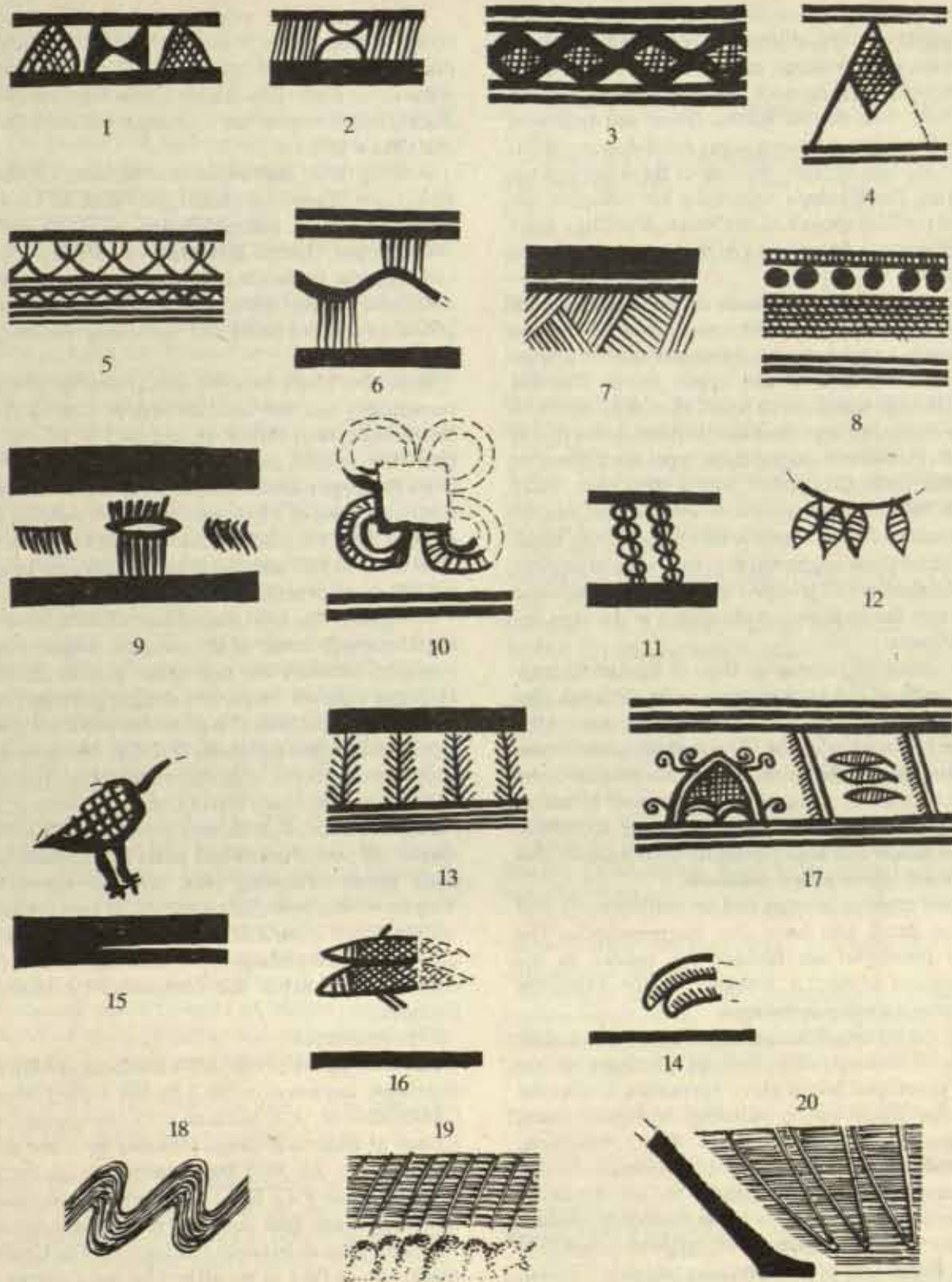


Fig. 6. Bara: painted and incised designs.

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tions; series of solid dots enclosed by horizontal bands; 'eyes' fringed by vertical lines; 'wings' surmounted by lines; square with 'bastions' or scrolls at corners; chain; and plain wide band on neck. Flora figures in petalled rosette, twig with needle leaves, frond and tree with plaintain-like leaves. Among fauna the fish is common, but other animals are rare. Several of these designs are absent from the Harappa repertoire but occur on the pottery of pre-Harappan KALIBANGAN, Kot-Diji, Amri (both in Pakistan), Mundigak (Afghanistan) and sites in n. Baluchistan.

All the characteristic elements of the Bara ware are present at the site right from the lowest levels. From the middle levels begin to turn up some mature Harappa forms which continue in the upper levels. But the number of such sherds is so small that they signify a contact with the Harappa tradition and not an overlap at Bara itself. Prominent among these types are the scored Indus goblet, elliptical goblet with footed base, small vase with button base and sieve with animal-headed vertical handle. In the upper levels some of the small globular vases show bright-red slip, the range of painted motifs becomes poor, grouped painted bands become common and the incisions on shoulders of the pots become shallower.

The evidence of housing at Bara is limited to fragments of walls of cut *kankar* stone and mud brick, the latter measuring $44 \times 22 \times 11$ cm and conforming to the size of the Harappa brick. Mud brick walls however are noticed only in middle levels. Fragments of kiln-burnt brick are available, measuring 6.5 cm and 14 cm in thickness and width, the length remaining unknown. Burnt clay lumps with impressions of reeds indicate that houses were made of wattle and daub.

U-shaped cooking hearths and an underground oval furnace or small kiln have also been noticed. The structural details of the furnace are similar to the furnaces found at KOTLA NIHANG KHAN. From the furnace came a small painted vase.

Among the articles of household use are stone saddle querns [6.19] and pounders. Balls of uncertain use are made of stone and baked clay. Terracotta is also the material for cakes [6.27] including triangular ones, animal figurines, bangles and beads. Beads, bracelets, bangles and incised balls are made of faience. [16.6]. Faience bangles in fact are plentiful at the site, but in the upper levels they appear to become thinner in section. But steatite which is popular at Harappa sites is totally absent at Bara. Use of semiprecious stones is limited, being exemplified by only a few beads of agate and carnelian. Bone was utilized for points, some of which may have served as styli. A bangle fragment, fishing hook [6.6] and several pieces of wire evidence the limited use of bronze.

What puzzles the mind is an unidentified terracotta object, 10 cm square at the base and 17.5 cm high. Tapering in outline, with two bifurcated curved upper ends, it has three finger depressions on the front and the back. Such curious objects are also reported from SANGHOL and CHANDIGARH.

Among the animal bones were those of *Elephas maximus* Linn. (Indian elephant), *Bos indicus* Linn. (zebu or domesticated humped cattle of India), *Bubalus bubalis* Linn. (Indian domesticated buffalo), *Capra hircus aegagrus* Erxleben (domesticated goat), *Ovis aries dolichura* Duerst (domestic sheep), *Axis axis* Erxleben (*chital* or spotted deer) and *Sus scrofa cristatus wagneri* (domestic pig).

Bara has given four ^{14}C dates, one of which lacks consistency and has been discarded. Among the other three dates, two, 1890 ± 95 and 1845 ± 155 B.C., come from the middle levels and the third, 1645 ± 90 B.C., from the upper levels. Considering that there is a substantial deposit of 1.8 m below the level yielding the date of 1890 ± 95 B.C., Bara would date at least to a span of 2000 to 1600 B.C. with no unreasonableness involved if we add another century at either end.

Altogether the total assemblage of Bara is not that of the Harappa. Some of the ceramic shapes which are common between the two occur also in related pre-Harappa cultures. Its painted designs go largely with the pre-Harappa traditions. Again with pre-Harappa KALIBANGAN it shares fabrics B, D and F. Not only does the Bara pottery occur with the mature Harappa cultural vestiges on the upper SUTLEJ, such as those at KOTLA NIHANG KHAN, ROPAR and even CHANDIGARH, it is spread all over Punjab and parts of Haryana, with its basic forms extending even into the upper Ganga-Yamuna *doab*, as at ALAMGIRPUR. It appears that it is a culture which is parallel with the Harappa at least along the Sutlej and is perhaps in the main the rural facet of the contemporary urban life dominated by Harappa influences.

—Y.D. SHARMA

Barabelun ($23^{\circ}24'$; $87^{\circ}59'$), Dt Burdwan, 29 km n.-e. of Burdwan, explored in 1972 by the author who found Chalcolithic [4.14.4] remains on a conspicuous mound known as Banerwar-danga crowned by a late medieval Śiva temple. In 1974 the Directorate of Arch., W. Bengal, under P.C. Das Gupta, undertook excavation here and made four cuttings, revealing three cultural Pds, with a break between Pds I and II. The Chalcolithic repertoire of Pd I as unearthed by the excavation consists mainly of the various forms of black-and-red ware [11.6.5] sometimes painted in translucent white on the black surface of the interior, viz. the knife-edged, carinated and channel-spouted bowl, dish-on-stand, basin with flaring mouth, convex-sided vase, cup with

sagger base and high beaker. The other pottery types include fragments of red ware painted in black, black-slipped pottery represented by broken lids, perforated vases and rusticated cooking vessels of ordinary ware. A type of tall beakers of black-and-red ware, a pair of chalice of the same ware, one retaining a channel spout, and a vase with gracefully tapering base and outcurved rim reveal superior craftsmanship. Some microlithic flakes and objects of copper and bone have also been recovered.

In Pd II iron appears to have been introduced as can be deduced from the presence of iron slag in the deposits. The remains also indicate that the early inhabitants of this place cultivated rice and also ate meat and fish, as the find of animal and fish bone indicates.

Pd II is followed by a break and succeeded by brick constructions of the historical period, Pd III, revealing three phases, the uppermost phase indicated by recesses presumably of a shrine. The surface of the mound bears circular foundations. Bricks of varying sizes laid in courses at different levels have been encountered. The cultural sequence observed here more or less confirms that of PANDU RAJAR DHIBI.

Perhaps related with the early culture of Barabelun, the vanishing relics of a cemetery associated with ceramics representing the bowl and basin of black-and-red ware with flanged or convex rim and dish-on-stand of red ware, exposed by weathering at a mound known as SANTAL-DANGA on the terraces of the Khari near Arrah (23°21'; 87°55'), situated nearly 10 km s.-w. from Barabelun, have been observed by P.C. Das Gupta and studied by A. Pal of the Anthropological Survey of India. They present some interesting cultural features. The exposed human skeleton represents an extended burial laid on the matrix of silty sand with n.-s. orientation, while exploration in the neighbouring area has resulted in the recovery of a burial urn of black-and-red ware containing spiral bangles of copper and a few bones. Beads of agate, carnelian and other semiprecious stones have also been collected from the surface.

—D.K. CHAKRABARTI

Barabhum, Dt Purulia. Middle Stone Age (Middle Palaeolithic [4.3]) tools and microliths [4.5].

IAR 1963-4.

Bar(a)chha, Dt Banda. The site situated at the confluence of the Baghain and the Rang yielded Middle Palaeolithic [4.3] tools consisting of side-scrapers, end-scrapers, burin-cum-side-scrapers, points, flakes, parallel-sided flakes and cores.

IAR 1961-2. Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad, p. 41.

Baragaon, Dt Fatehgarh. The site 9 km w. of Ghazipur yielded NBPW [11.16].

IAR 1957-8.

Baragur, Dt Kolar. Site with black-and-red and red wares.

IAR 1972-3.

Baragura, Dt Kolar. Megalithic [4.17.8] site with urn burials.

Information from C. Krishna Murthy through A. Sundara.

Barahajpar, Dt Gorakhpur. Black-and-red Ware [11.6.3].

IAR 1962-3.

Barahuti, Dt Varanasi. Black-and-red Ware [11.6.3].

IAR 1962-3.

Barakalan, Dt Bhind. Sherds of black-painted red ware, grey ware, black-and-red ware and the NBPW [11.16] along with a few microlithic flakes.

IAR 1963-4.

Barakund, Dt E. Nimar. Tools of Series I and II (Lower and Middle Palaeolithic [4.2.3]) and microliths [4.5].

IAR 1960-1.

Baral, Dt Calcutta. Sherds of the Rouletted Ware [11.21] were found at Baral on the Adiganga about 7.5 km from s. Calcutta.

IAR 1957-8.

Barala, Dt Banaskantha. Microliths [4.5].

IAR 1964-5.

Barailia, Dt Lucknow. Early historical site yielding NBPW [11.16] and later wares.

IAR 1969-70.

Bara Manda, Dt Mayurbhanj. Series II tools (Middle Palaeolithic [4.3]) and Neolithic implements [4.6.7].

IAR 1957-8; 1958-9.

Bara Nanyani, Dt Purulia. Microliths [4.5].

IAR 1959-60.

Baranagar, Dt Ujjain. Historical site.

IAR 1971-2.

Barari, Dt Mirzapur. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1962-3.

Bara-Samana, Dt Rupanagar. Harappa [4.9] and late Harappa [4.10] site.

IAR 1962-3. Suraj Bhan, 1975, *Excavations at Mitathal and other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra.

Barasol, Dt Mayurbhanj. Tools of Series I and II (Lower and Middle Palaeolithic [4.2.3]).

IAR 1957-8.

Barata, Dt Bhind. PGW [11.14] and NBPW [11.16] site.

IAR 1958-9.

Barauli¹, Dt Bhind. Black-and-red ware and NBPW [11.16].

IAR 1959-60.

Barauli², Dt Bulandshahr. PGW [11.14] site.

IAR 1964-5.

Barbil, Dt Singhbhum. Dolmenoid structures and menhirs [4.17.4].

IAR 1961-2.

Barda, Dt Bankura. Microliths [4.5].

IAR 1959-60.

Barda bridge, Dt Singhbhum. Palaeoliths [4.2] near

CHAKRADHARPUR.

IAR 1959-60.

Bardha, Dt Singhbhum. Palaeoliths [4.2] and microliths [4.5].

IAR 1960-1.

Bardi, Dt Sidhi. Tools of the Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3]).

IAR 1961-2; 1962-3.

Bardipada¹, Dt Dhule. Microlithic [4.5] site.

IAR 1958-9.

Bardipada², Dt Surat. Lower and Middle Palaeolithic [4.2.3] and Mesolithic [4.5] site.

IAR 1967-8.

Bardipur, Dt Medak. Microlithic [4.5] site.

IAR 1959-60.

Bardugua, Dt Singhbhum. Three shouldered celts of copper [4.11].

Patna Museum Collection.

Baregaon-Nandur, Dt Ahmadnagar. Series II (Middle Palaeolithic [4.3]) tools mostly scrapers and microliths [4.5].

IAR 1958-9.

Barehat, Dt Bhind. NBPW [11.16] and black-and-red ware found.

IAR 1958-9.

Bareke, Dt Ganganagar. PGW [11.14] and associated wares, a shell bangle and *ghata*-shaped terracotta bead and a Kushan coin [3.1] were found.

Unpublished.

Bareri, Dt Janupur. Mound yielding black-and-red ware [11.6.3] and brick structures.

IAR 1956-7.

Bargajari, Dt Purulia. Microliths [4.5].

IAR 1959-60.

Bargama, Dt Sidhi. Tools of the Early and Middle Stone (Lower and Middle Palaeolithic [4.2.3]) Ages.

IAR 1962-3.

Bargaon¹, Dt Bulandshahr. Early historical site yielding coarse grey ware, Black-slipped Ware [11.13] and plain red ware of the Sunga-Kushan type.

IAR 1965-6.

Bargaon², Dt Mandla. Middle and Late Stone Age (Middle Palaeolithic [4.3] and Mesolithic [4.5]) tools found on the banks of the Sigli nullah.

IAR 1963-4.

Bargaon³, Dt Saharanpur. Excavation revealed a 1 m thick occupational deposit yielding the Harappa Ware [11.3] along with the unslipped OCW [11.5]. The principal shapes included: the dish-on-stand; bowl with featureless rim; lid with central knob; Indus goblet; ring-stand; miniature pedestalled cup; long-necked globular flask; and vase with cord-impressed designs and incised bands on the exterior. Other noteworthy finds were: copper rings, chert blades, weights [6.29], bull-headed terracotta toy-carts, terracotta and faience [16.6] bangles and terracotta cakes [6.27] with finger impressions.

IAR 1963-4.

Bargarh, Dt Banda. Painted rock-shelter [13].

Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad, p. 54.

Bargunda¹, Dt Hazaribagh. Hoard of copper objects found in 1850 [4.11].

Foote, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 164.

Bargunda², Dt Indore. Lower Palaeolithic [4.2] site.

IAR 1970-1.

Bargur, Dt Dharmapuri. Neolithic [4.6.10] site.

IAR 1962-3.

Barha, Dt Gwalior. Palaeolithic [4.2] site and early medieval rock-cut caves.

IAR 1958-9.

Barhai, Dt Sidhi. Tools of the Early and Middle Stone (Lower and Middle Palaeolithic [4.2, 3]) Ages.

IAR 1962-3.

Barhal, Dt Kanpur. PGW [11.14] and NBPW [11.16] site.

IAR 1961-2.

Barhayapar, Dt Gorakhpur. Black-and-red [11.6.3] and NBPW [11.16].

IAR 1963-4.

Bari, Dt Kangra. Lower Palaeolithic [4.2] site in the BEAS VALLEY.

Mohapatra, G.C., 1966, in *Bull. Deccan Coll. Res. Inst.*, pp. 221-37.

Bari Achnar, Dt Chittaurgarh. Microlithic [4.5] site. See BARA BEDLA.

IAR 1956-7.

Bariarpur, Dt Panna. At Bariarpur on the Ken were found developed bifacial tools of the handaxe culture [4.2], along with those made on large rounded quartzite pebbles. These handaxes were seen lying in the highest terrace of the Ken, while a flake-point-scraper industry on chert, jasper, etc., similar to Series II (Middle Palaeolithic [4.3]) of the NARMADA-GODAVARI VALLEYS, was found at a lower level in the vicinity.

IAR 1957-8. *AI*, 17, 1961, p. 23.

Bari Bhaini, Dt Karnal. Late Harappa [4.10] material comparable to MITATHAL II B was found at Bari Bhaini-1 and 2.

Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 125.

Bari Ghutara, Dt Mirzapur. Upper Palaeolithic [4.4] site yielding blades, points, scrapers and burins.

IAR 1970-1.

Bari-Khatu, Dt Nagaur. Late Stone Age (Mesolithic [4.5]) site.

IAR 1965-6.

Baripada (21°56'; 86°40'), Dt Mayurbhanj. In the thick deposit of detrital laterite at variable depths were found Acheulian bifaces and choppers [4.2] in different stages of manufacture. The detrital laterite was found to be succeeded, after a break, by a deposit of brown clay. At places a *kankar* layer was noticed at the junction between the above-mentioned deposits. This junction-

deposit yielded a flake industry as evidenced by the occurrence *in situ* of different types of scrapers [4.3] and a number of undifferentiated flakes.

IAR 1968-9.

Bariyari, Dt Banda. An extensive Stone Age site, covering an area of 12 sq km on the right bank of a tributary of the Yamuna, now reduced by silting to the narrow proportions of a nullah. Three terraces were noticed at the site. Terrace 1 yielded large numbers of handaxes, cleavers and scrapers representing a bifacial industry of the Madras complex [4.2], besides flakes and cores. Terrace 2 yielded redeposited tools washed down from Terrace 1; flakes and flake tools of the Levallois technique [16.15.1] and fresh tools showing Upper Palaeolithic [4.4] characteristics comprising largely blades or flake tools. Terrace 3 tool assemblage consisted exclusively of microlithic blades, scrapers and burins besides fluted cores, suggesting the evolution of the microlithic industry [4.5] at the site from blade tools. No pottery was associated with these implements.

IAR 1955-6.

Barji, Dt Mirzapur. Cairn circles and dolmenoid cists [4.17.3].

IAR 1962-3.

Barka, Dt Barmer. Tools of Series II (Middle Palaeolithic [4.3]) made on fine-grained jasper were found along a dried-up river-bed.

IAR 1958-9.

Barkacha, Dt Mirzapur, about 12 km from Mirzapur on the Mirzapur-Robertsganj road. The site yielded a large number of microlithic tools [4.5]. Cairn circles and dolmenoid cists [4.17.3] were also found.

IAR 1956-7; 1962-3.

Barkad, Dt Mirzapur. Black-and-red ware [11.6.3] and NBPW [11.16].

IAR 1962-3.

Barkali, Dt Meerut. Historical mounds.

IAR 1970-1.

Barkhedhi, Dt Raisen. A group of rock-shelters [13].

IAR 1965-6.

Barkhera, Dt Raisen. Rock-shelters [13] yielding pottery with close affinity with the Malwa Ware [11.10]. See BHIMBETKA.

Singh, U.V., 1978, in *Arch. Congress and Seminar: 1976*, Kurukshetra.

Barkola, Dt Bankura. Early Stone Age (Lower Palaeolithic [4.2]) and microlithic tools.

IAR 1963-4. Das Gupta, P.C., 1966, *Exploring Bengal's Past*, Calcutta.

Barmanghat, Dt Narsinghpur. A large number of artefacts and mammalian fossils [15.1].

IAR 1960-1.

Barnawa (29°7'; 77°26'), Dt Meerut. PGW [11.14] site. NBPW [11.16] was also found.

AI, 10 & 11, 1954 & 1955, pp. 139 & 144.

Barner Sharif, Dt Bulandshahr. PGW [11.14], black-

and-red ware [11.6.3], Black-slipped Ware [11.13], red ware of the Sunga-Kushan period and medieval ware.

IAR 1966-7.

Baroda¹, Dt Sagar. A group of ten painted rock-shelters [13].

Pandey, S.K., 1970, unpublished thesis.

Baroda², See VADODARA.

Barokhora, Dt Allahabad. Lower Palaeolithic [4.2] site. See TUNDIARA VALLEY.

IAR 1968-9.

Baroli¹, Dt Indore. Mesolithic [4.5] site.

IAR 1970-1.

Baroli², Dt Kangra. Lower Palaeolithic [4.2] site in the BEAS VALLEY opposite Nadaun.

Mohapatra, G.C., 1966, in *Bull. Deccan College Res. Inst.*, pp. 221-37.

Baror, Dt Ganganagar. Predominantly pre-Harappa [4.8] and Harappa [4.9] site. See SARASVATĪ VALLEY.

Unpublished.

Barsana, Dt Jind. Barsana-1 yielded early historical remains, while Barsana-2 had pre-Harappa [4.8] material.

IAR 1966-7.

Barso, Dt Bharatpur. Kushan red ware [4.18.2].

IAR 1971-2.

Bartha, Dt Varanasi. Black-and-red ware [11.6.3].

IAR 1962-3.

Bartola, Dt Ranchi. 21 flat copper celts [4.11].

Jour. Bihar & Orissa Res. Soc., 1915, p. 127.

Barudih, Dt Singhbhum. Neolithic [4.6.5] site on the Sanjai also yielding palaeoliths and microliths. The pottery was both hand- and wheel-made and was represented by grey, orange-brown and black wares.

IAR 1963-4; 1968-9; 1972-3.

Barumal, Dt Valsad. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAR 1964-5.

Barwani, Dt W. Nimar. Tools of Series II (Middle Palaeolithic [4.3]).

IAR 1958-9.

Barwar, Dt Jhansi. Lower Palaeolithic [4.2] site.

IAR 1960-1.

Barwe, Dt Ranchi. Late Stone Age (Mesolithic [4.5]) site.

IAR 1965-6.

Baryipar, Dt Gorakhpur. Black-and-red ware [11.6.3].

IAR 1963-4.

Basa, Dt Damoh. Middle Palaeolithic [4.3] site.

AI 17, 1961, pp. 5-36.

Basa, Dt Dhule. Series II (Middle Palaeolithic [4.3]) site on the river Kopra.

IAR 1958-9.

Basantapur, Dt Burdwan. Painted black-and-red and bright-red wares together with microliths [4.14.4].

IAR 1961-2.

Basantpur, Dt Ambala. PGW [11.14] site.

IAR 1963-4. Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 125.

Basantpur, Dt Bankura. Tools of Series II (Middle Palaeolithic [4.3]) and microliths [4.5].

IAR 1959-60; 1963-4.

Basappanadoddi, Dt Mysore. Megalithic cist burials [4.17.8].

IAR 1961-2.

Basarh. See VAISALI.

Basari, Dt Mirzapur. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1962-3.

Basarihal, Dt Raichur. Megalithic [4.17.8] site with cairn stone circles.

Karnataka Bharati, 6, 1, pp. 64-75.

Basar-ke-Gillan, Dt Amritsar. Grey ware and Black-slipped ware [11.13].

IAR 1962-3.

Basarkod, Dt Dharwar. Neolithic [4.6.9]-Chalcolithic [4.18.8] site yielding grey ware sherds of BRAHMAGIRI fabric, parallel-sided blades and microliths.

IAR 1966-7.

Basauli, Dt Mirzapur. The hanging rock of the roof of a shelter [13] near Basauli was found to contain paintings depicting porcupines and human figures. From the area were recovered seemingly Upper Palaeolithic [4.4] and microlithic tools [4.5] along with fossilized bones.

IAR 1956-7.

Basayi Khera, Dt Gurgaon. Late Harappa [4.10] site.

Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.

Basinepalle, Dt Kurnool. Megalithic [4.17.7] site with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Basrai, Dt Gurdaspur. Black-slipped [11.13] Ware and black-and-red and grey wares.

IAR 1961-2.

Bassi, Dt Gurgaon. Late Harappa [4.10] site.

Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 126.

Bassi, Dt Patiala. Late Harappa [4.10] site.

Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 122.

Basti, Dt Basti. NBPW [11.16] site.

IAR 1962-3.

Bastipad, Bastipadu, Dt Kurnool. Neolithic implements [4.6.8], shell ornaments and pottery and Megalithic [4.17.7] pottery.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras. IAR 1962-3.

Basudih, Dt Purulia. Microliths [4.5].

IAR 1959-60.

Batai, Dt Jabalpur. Tools of Series II (Middle Palaeolithic [4.3]).

IAR 1959-60.

Batambra, Dt Bidar. Early historical [4.18.11] site.

Karnataka Bharati, 11, 3.

Bataskuwar, Dt Allahabad. Middle Palaeolithic [4.3] factory site.

IAR 1969-70.

Bataubir, Dt Allahabad. Early, Middle and Late Stone Age (Lower and Middle Palaeolithic [4.2.3]) and Mesolithic [4.5] site on the Nadaha nullah. Megaliths [4.17.3] were also found.

IAR 1963-4; 1968-9.

Baterla, Dt Rupnagar. PGW [11.14] site.

IAR 1964-5.

Bateswar (Bhateswar; 26°56'; 78°33'), Dt Agra, where the author had picked up a few sherds of the PGW [11.14], black-and-red [11.6.3] and black-slipped [11.13] wares and the NBPW [11.16] in 1972 from the mounds in the village. In 1974 he undertook a small-scale excavation on behalf of the ASI, revealing a fourfold cultural sequence. Pd I, dated to 620 ± 90 B.C. by ¹⁴C determination, has produced the PGW, pale-red ware, sometimes painted, Black-slipped Ware [11.13], black-and-red ware [11.6.3], a soft-red ware with marble finish and a bulk of red ware in fine and coarse fabrics. In the coarse fabric some specimens bear incised designs, viz., triangular notches, wavy lines and diamonds obtained by small notches, mat impressions and impressions resembling the tortoise-shell. Some vessels are rusticated below the waist. The shapes represented are the bowl, dish, squat dish-on-stand, basin, *hāṇḍī*, vase and jar. Among the other finds are: discs, marbles, bangles, beads and skin-rubber [18.4] in terracotta; hopscotches [6.7.3] on pottery; stone ball; beads of semiprecious stones; a bone point; a few fragmentary iron objects; and a discular copper piece. No structure has been encountered.

Pd II is characterized by the NBPW; the latest level of this Pd has a ¹⁴C date of 640 ± 160 B.C. Besides the NBPW, black-slipped ware, thick grey, black-and-red and red wares of fine and coarse fabrics occur. The shapes met with are the bowl, dish, basin, cooking pan, *hāṇḍī*, vase and jar. Other finds include: terracotta human and animal figurines, bangles, marbles, beads, pendants, net-sinkers [6.16], rattles [6.7.4], discs, ear studs, wheels, skin-rubbers and a sealing bearing two taurines, a *svastika*, a *mina-dhvaja* (fish standard) and another partly damaged symbol; a bead and a bangle in shell; bone points, styli [20.5], antimony rods [18.1], bracelets and a beautifully carved lid of a jewel box; glass beads and bangles; carnelian and agate beads; and stone balls, pestles [6.19] and a saddle-quern leg. A large quantity of iron slag [16.9.4] throughout the deposits and the iron objects suggest the smelting of iron. A terracotta crucible [16.4] and fragments of copper objects—beads and rings—attest to copper-smithy. Several structural remains have been exposed, the earliest

being of mud brick with four successive rammed floors associated with it. Superimposed on them is a kiln-burnt brick structure and several successive mud-rammed floors. Floors with brick-lined edges have also come to light.

Pd III can be divided into three Sub-pds based on the structural activity. The structures are made of burnt brick. The walls and floors are laid on brick-jelly foundations or soled with hard brownish earth. The pottery is generally dull-red and coarse. A few pieces of the Red Polished Ware [11.23] also have been noticed. The shapes are the bowl, ink-pot type of lid, sprinkler, basin, vase and jar. The other objects include terracotta human and animal figurines, bangles, beads, discs, spindle-whorls [6.25], hopscotches and a votive tank [12.11]; shell bangle; bone points; stone caskets; and beads. A spiralled ear-stud in zinc and an antimony rod in copper and fragmentary iron objects have also been recovered. The Pd is datable to between A.D. 100 and 600.

Pd IV is assignable to medieval times. The strata are disturbed by brick-robbers. The pottery is generally dull-red and dark-grey, the shapes being the bowl, lid, *hāṇḍī* and jar.

The cultural repertoire from the site has similarity with that of HASTINĀPURA, AHICCHATRĀ, ATRANJIKHERA and SONKH but for the incised pottery from Pd I which is characteristic of Bateswar.

—J.S. NIGAM

Batia Nadi, Dt Mirzapur. Palaeolithic [4.2-3] site in the Singrauli basin.

Krishnaswamy, V.D., & Soundara-Rajan, K.V., 1951, in *AI* 7, pp. 45-6.

Batkar, Dt Birbhum. Black-and-red ware [11.6.5] site.

IAR 1967-8.

Batrakuppa, Dt Kolar. Megalithic [4.17.8] site.

Information from A. Sundara.

Battalamalai hill, Dt Dharmapuri. Neolithic [4.6.10] site.

IAR 1970-1.

Battalavallam (13°35'; 80°00'), Dt Chittoor. Excavation revealed a peneplain of completely laterized Sriperumbudur shale which was found to have been impregnated with ferruginous solution, resulting in an extremely hard vesicular form. The surface of the laterite showed disconformity over which lay a deposit of detrital laterite. The latter deposit contained tools of an earlier industry, presumably washed down along with the laterite, as also of an industry belonging to the transitional phase, between the Middle and Late Stone Age (Middle Palaeolithic [4.3] and Mesolithic [4.5]) horizons. Lower Palaeolithic [4.2] tools were also found.

IAR 1967-8; 1968-9.

Battur, Dt Dharwar. Early historical site. A few sherds of grey-ware urns were also found. See ADERKATTI.

IAR 1961-2.

Baughta, Dt Kangra. Lower Palaeolithic [4.2] site in the BEAS VALLEY.

Mohapatra, G.C., 1966, in *Bull. Deccan College Res. Inst.*, pp. 221-37.

Baundki, Dt Saharanpur. Harappa [4.9] and OCW [4.12] site.

IAR 1966-7.

Baur, Dt Bijapur. Chalcolithic habitation [4.14.8] site. Early historical remains also occur. See BAGLUR.

IAR 1960-1.

Bautalada, Dt Raigarh. Cave with paintings [13].

Gupta, J., 1965, *Pragaitihika Bharatiya Chitrakala*, Allahabad, p. 72.

Bavanahalli, Dt Kolar. Megalithic [4.14.8] site with stone circles and cists.

Information from A. Sundara.

Bavaka, Dt Panch Mahals. Microlithic [4.5] site.

Sonawane, V.H., 1976, in *Arch. Congress & Seminar, 1972*, Kurukshetra.

Bavalia, Dt Ujjain. Early historical site.

IAR 1971-2.

Bavka, Dt Bombay. Mesolithic [4.5] site.

IAR 1955-6.

Bazidpur Majra, Dt Saharanpur. Harappa [4.9] and OCW [4.12] site.

IAR 1966-7.

Beas-Banganga valley, Himachal Pradesh. The Beas river with its source in the Manali area is one of the major rivers draining the s. slopes of the Himalayas. It has a very steep gradient in its upper course but at its confluence with the Banganga near Guler the gradient is very low (about 5 m per km). The river here flows through a broad shallow valley although its banks are made up of high cliffs composed mostly of silt and clay, at places with beds of pebbles or boulders. A few of the fine cliff sections can be seen at Andaura village on the Pathankot-Mukerian road.

The Banganga (Baner Banganga), a tributary of the Beas, originates in the spurs of the Sudhar hills of the Dhaola Dhar range of the Himalayas and after traversing a steep gorge in the Sudhar hills emerges in a broad valley. It then cuts through the Kangra hills and following a meandering precipitous gorge meets the Beas a little downstream of Guler. Within a distance of about 66 km from its source to its confluence with the Beas, the fall in its bed-level is from 1806 to 385 m, the average gradient being 35 m per 1.66 km. Amongst the tributaries which drain into the Banganga the important are the Iku Khad which meets the Banganga in the vicinity of Khas Sihund, the Darun Khad which joins a little below Kangra and the Manuni Khad which originating east of Dharmasala traverses somewhat the same distance as the Banganga and meets it near Kangra. The Banganga and all the streams which run roughly parallel to it flow across the strike of the Siwalik formations. The

main stream pattern thus does not maintain the structure of the underlying formations but shows a sort of antecedent drainage.

The most impressive geomorphological feature of the area is the series of high river terraces, which occur everywhere on the major and subsidiary streams. The oldest and highest of the terraces lie on the Beas. As many as five terraces have been observed on the Banganga. The highest, T_1 , is about 183 m above the water level, while T_2 , T_3 and T_4 are successively at 125 m, 50 m and 30 m; the youngest, T_5 , is at about 10 m. In addition two or three subsidiary terraces have been noticed at places lying between T_1 and T_2 , T_2 and T_3 and T_4 and T_5 . Fine sections of T_2 and T_3 are exposed on the railway line about 1.5 km from Guler towards Jawalamukhi. T_1 and T_2 are better developed around Guler but upstream near Kangra they occur as small remnants, perhaps due to intensive erosion in that area.

Each of the terraces in this region has its own characteristic deposit in the enclosed pebbles of different rocks and their degree of weathering. Even in the smaller terrace remnants occurring at places far away from each other the deposit underlying the respective terrace shows an identity. Similarly the slopes between the two consecutive terraces generally have the same form. It is thus possible to correlate disjointed terrace-facets on the basis of their deposits and morphological features.

The terraces occurring near Guler and Kangra have been studied in detail. Here T_1 and T_2 are underlain by about 2 to 3 m deposit comprising mostly of huge boulders, some measuring over 1 m diameter, of quartzite and sandstone with a comparatively little mixture of metamorphic and igneous rocks and red-brown clay. The deposit does not show any stratification and generally indicates characteristics of fan deposits and the enclosed rocks are considerably weathered. A notable change in the terrace deposit is observed in T_3 which has a greater proportion of less weathered blocks of granite, some measuring almost 5 to 6 m across. The occurrence of granitic material in profusion and its erratic nature were first thought to be due to morainic cause thereby suggesting glacial action in its making. The quartzite boulders from T_1 and T_2 are also erratic in a way, because the underlying Siwalik beds have softer sandstones and no quartzites.

Earlier this phenomenon was explained as being due to glaciers. Lal, 1956, who had explored this area for Stone Age studies also attributed these terraces and their deposits to the Quaternary glacial episodes of the Himalayas [9.7]. Subsequent work by Joshi, 1968, 1973, has shown the absence of glacial morphological forms below 5000 m, the height of the permanent snow-line, on the s. slope of the Dhaola Dhar range. Within the

explored area there are no remnants of moraines. The components of loosely cemented bouldery gravel containing granite and quartzite observed in the terrace deposits are fairly rolled and angular debris is rare. The glacial cirques are presently located at high altitudes and none are seen at lower levels from which ancient glaciers could have emanated.

The terrace deposits in their unsorted components clearly show characteristics of fan deposits. The landscape has also preserved the morphological forms of alluvial fans and cones which seem to have been formed at the foot of high cliffs of the Dhaola Dhar. The mechanism of cone formations of great thickness of 100 to 150 m was a process of erosion of the rocks exposed on the steep slopes due to heavy monsoon precipitation in the forms of rain and snow. This local rock material got mixed up with the one discharged by the streams coming from the inner ranges. After the formation of series of cones at a particular time they were later dissected by streams leaving terraces on both banks of the streams. The cones of the next period partly overlapped the older ones and spread out farther at the lower level. The down-cutting process by the new streams formed another terrace at a level lower than that of the first. Thus there were alternate periods of accumulation and erosion of the cones (cone-in-cone topography). During the same period the mountain-building activity played a significant role in raising these terraces at high levels.

In the Banganga valley four stages of cone formations have been noticed. The highest and the oldest of them (Sikhov-I cone) occurs at contour 1166 m near the village Sikhov, close to Dharmasala. Sikhov-II is in the same locality at 975 m. The Kangra-I and Kangra-II cones have much better preserved terraces in this region. The main terrace at Kangra and T_3 at Guler are the best examples of Kangra-I cone.

The four main terraces observed at and around Guler were earlier considered to represent the four glaciations, viz. Günz, Mindel, Riss and Würm. As stated above there is no evidence of direct glaciation in the area. However the cones could have formed during periodic climatic changes normally witnessed in periglacial areas. Thus they may better be equated with the pluvial and interpluvial episodes of the Pleistocene period [9.7.2]. The third terrace on the Sirsa river in the Nalagarh area in Himachal Pradesh—the terrace equivalent to Kangra-I—has been ascribed to the Late Pleistocene on the basis of fresh-water gastropods found on that terrace. The highest terrace in these areas is cut into the Upper Siwalik Boulder Bed which palaeontologically and stratigraphically has been dated to the Middle Pleistocene. Thus all the terraces in the area would be younger than Middle Pleistocene.

Stone Age artefacts were collected from several sites

in this valley on the surface of the terraces or on the slopes between the two consecutive terraces. The terraces themselves are thus not very useful for the chronology of Stone Age industries of the area.

Lower palaeolithic tools [4.2] were obtained from almost all the sites, the more important in them being GULER and HARIPUR. The tools are mostly made on river pebbles of different shapes—spherical, oblong, discoid, ellipsoid, etc. The common rock is quartzite belonging to early geological formations. The most dominant tool types are unifacially and bifacially flaked choppers [4.2] and heavy scrapers usually showing steep flaking to form the working edge. The shallow and stepped flake scars indicate the Acheulian technique [15.17]. The tools are fresh and unrolled. Cleavers [4.2] and proto-handaxes have been found at DHAWALA KOTIA and PANJASARAN.

de Terra and Paterson, 1939, discovered in the Sohan river a series of river terraces. And on them were found palaeoliths mostly made on pebbles and flakes thereof. de Terra christened this pebble-tool industry as Sohan culture consisting of a variety of choppers and flake tools [4.2.1]. At some sites they also discovered handaxe-cleaver industries. The sequence of the Sohan terraces was also compared with the succession of Quaternary glaciations in Kashmir Himalayas. A similar sequence of terraces and comparable pebble industries were discovered by Lal, 1956, in the Banganga valley. The river valley was subsequently surveyed by Joshi, 1968, 1973, with a view to tracing the relationships of the terraces with Stone Age industries and investigating the formation of terraces and also to ascertaining whether they were related to the Quaternary glaciations in the area. Mohapatra had also studied this area and besides discovering some more sites yielding chopper industries found neoliths near HARIPUR at the confluence of the Banganga with the Beas [4.6.3].

de Terra, H., & Paterson, T.T., 1939, *Studies on the Ice Age in India & Associated Human Remains*, Washington. Joshi, R.V., 1968, in *Cultural Forum*, 9, pp. 96-9; 1973, in *Bull. Deccan College Res. Inst.*, 34, 1-4, pp. 101-16. Lal, B.B., 1956, in *AI*, 12, 1956, pp. 58-92. —R.V. JOSHI

Bed, (22°26'; 69°57'), Dt Jamnagar. Transitional phase of Harappa culture corresponding to RANGPUR II C.

AI 18 & 19, 1962 & 1963, p. 205.

Beder Bellagal, Dt Bellary. Palaeolithic and Neolithic [4.6.9] site.

Footo, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, pp. 77-8.

Bedh ki Jori, Dt Jaipur. OCW [11.5], Kushan red ware and terracottas.

IAR 1972-3.

Bedia¹, Dt Mirzapur. Prehistoric paintings and rock-shelters. [13].

IAR 1962-3.

Bedia², Dt W. Nimar. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAR 1964-5.

Bediya, Dt Mirzapur. Rock-shelter with paintings [13]. Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad.

Bedla, Dt Udaipur. Microlithic site in the Ahar valley.

IAR 1962-3.

Bedvan Moti, Dt Bharuch. Late Stone Age (Mesolithic [4.5]) site.

IAR 1969-70.

Beeche, Dt Sidhi. Tools of the Early and Middle Stone (Lower and Middle Palaeolithic [4.2.3]) Ages.

IAR 1962-3.

Beehive Hill, Dt Andaman. Kitchen-midden [14.11] site of Mesolithic [4.5] flake and blade culture.

Dutta, P.C., 1959, in *Proc. Indian Science Congress*, 3, p. 432.

Beernur, Dt Gulbarga. Chalcolithic [4.14.8] site.

Jour. Geological Soc., Hyderabad, 4, p. 10.

Begagund. See BURZAHOM.

Begayund, Dt Anantnag. Neolithic [4.6.1] assemblage similar to that revealed at BURZAHOM. Menhirs [4.17.1] of the Burzahom type were also found.

IAR 1962-3.

Begram, Dt Birbhum. Black-and-red ware [11.6.5] site also yielding channel-spouted bowls [11.10].

IAR 1967-8.

Begunadiha, Dt Midnapur. Lower Palaeolithic [4.2] tools.

IAR 1968-9.

Beharia, Dt Birbhum. Black-and-red ware [11.6.5] site.

IAR 1967-8.

Beheria, Dt Birbhum. Black-and-red ware [11.6.5].

IAR 1967-8.

Bekharra, Dt Bharuch. Late Stone Age (Mesolithic [4.5]) site.

IAR 1969-70.

Belagodanahalu, Dt Bellary. Neolithic [4.6.9] Chalcolithic [4.14.8] site.

IAR 1962-3.

Belaguppa, Dt Mysore. Cairn circles [4.17.8].

IAR 1962-3.

Belakavadi, Dt Mandya. Megalithic habitation and early historical [4.18.11] site.

Mysore Arch. Report, 1947-56, p. 51.

Belan valley, Dts Varanasi to Allahabad, from where a complete sequence of Stone Age cultures from the Lower Palaeolithic [4.2] to the Neolithic [4.6.3] and Chalcolithic [4.17.3] is reported. The Belan is a tributary of the Tons, which empties into the Ganga a little downstream of Allahabad. The potentiality of the Belan-Seoti valley was brought to notice by G.R. Sharma and his colleagues. As a result of the intensive survey carried out by this team a definite geochronology has been assigned to the various Stone Age culture stages, which bases primarily on the series of Pleistocene [9.8.2] and early Holocene [9.8.4] sediments of the region.

The earliest implementiferous deposit of the Belan-Seoti valley is Gravel I which rests on the decomposed surface of the sandstone bed-rock. Composed of angular huge pebbles the deposit is reported to have yielded Abbevillio-Acheulian [4.2] implements and animal fossils. Gravel I is *in situ* and is cemented. The Abbevillio-Acheulian tool kit from this comprises pebble tools, handaxes, cleavers and retouched flakes. A thick (3-4 m) layer of sterile silt which separates Gravel I from Gravel II is believed to be formed due to the water stagnation. On this silt lies a thick cemented gravel which contains a 'blade-flake-scraper' industry along with faunal remains. On account of cross-bedding and intervening silt layers Gravel II has been grouped within three phases, II A, II B, and II C. The lowermost phase is the coarsest of the three and has revealed both Lower Palaeolithic and Middle Palaeolithic [4.3] artefacts, thus marking a transitional phase between the Acheulian and the Middle Palaeolithic traditions. The next phase belongs to the pure Middle Palaeolithic tradition in which both quartzite and chert were used for the manufacture of implements. The topmost phase, II C, is composed of the finest gravel which consists of small tools made out of chert chunks. A similar assemblage has been discovered from the 'red clay' or 'loose gravel', which rests over the highly cemented Gravel II. Overlying the 'loose gravel' is a deposit of 'yellow clay', which is associated with an assemblage belonging to a transitional stage between the Middle Palaeolithic and the Upper Palaeolithic [4.4] phases. Blade and burin industry of the Upper Palaeolithic phase has been obtained from the next layer of Gravel III. The ^{14}C date of the shells from this deposit is 19715 ± 340 B.C. A noteworthy discovery from this deposit is a bone figure of the mother goddess (?) [12.6]. The last alluvial deposit of the valley is a silt layer which has revealed tools of both the Upper Palaeolithic and the microlithic traditions and is taken to represent a transitional phase between the Palaeolithic and Mesolithic [4.5] stages. This layer has been assigned to the end of the Pleistocene epoch (Sharma, 1973).

The later part of the history is unfolded from excavations of rock-shelters containing microlithic [4.5] remains and Neolithic [4.4] settlements. A succession of non-geometric microlithic tradition without pottery is the earliest phase and is followed by geometric microlithic tools with pottery and the Neolithic stage respectively.

The hillocks of the vicinity which are in fact an extension of the Kaimur range house a number of factory sites belonging to all the three phases of the Palaeolithic epoch and also of Microlithic tradition. The projection of the hills merging with the alluvial plains in the form of gentle slopes were selected as tool-making sites by the prehistoric man, as quartzite boulders which were car-

ried from their *in situ* outcrops by the erosional gullies are available in considerable amounts. Quartzite being the principal raw material for the Lower and the Middle Palaeolithic tools, these spots were found suitable for factory sites. 'So far 17 factory sites of the Lower Palaeolithic, 23 of the Middle Palaeolithic and about a dozen of the Upper Palaeolithic have been discovered' (Sharma, 1973, p. 109). Their concentration is on the hillocks of Chandotri, Ramgarhwa, Orawa and Drummondganj (IAR 1969-70, p. 36). The location of these factory sites is noteworthy as on higher parts around the erosional gullies and situated the factory sites of the Lower Palaeolithic phase, whereas the ones where Middle Palaeolithic tools were manufactured are concentrated at the foot of the hillocks. Still lower are the spots for the making of the Upper Palaeolithic and microlithic tools. It is interesting to note that all the factory sites which have a higher location than the uppermost alluvial were beyond the reach of the river action.

[Little seems to have been published about the Neolithic and Chalcolithic phases, the latter of which has a ^{14}C date of 6480 ± 185 B.P., though Agrawal, 1978, p. 43, says: 'Whether these were Neolithic-Chalcolithic or Mesolithic cultures can be resolved only after further work.']

Agrawal, D.P., 1978, in *Jour. of Human Evolution*, 7, pp. 37-44.
Sharma, G.R., 1973, in Agrawal, D.P., & Ghosh, A., ed., *Radio-carbon & Indian Arch.*, Bombay, pp. 106-10; 1975, Presidential Address to Indian Prehistoric Soc., Delhi, republished in 1975, K.C. Chattopadhyaya Memorial Volume, Allahabad, pp. 1-20.—V. JAYASWAL.

Belapur (old), Dt Ahmadnagar. Tools of Series II (Middle Palaeolithic) [4.3].

IAR 1955-6.

Belara (Bada), Dt Bharatpur. Kushan red-ware site.

IAR 1970-1.

Bela-Rahi (Ramgarhwa Pahar), Dt Allahabad. Lower Palaeolithic [4.2] factory site.

IAR 1969-70.

Belasy, Dt Mirzapur. Upper Palaeolithic [4.4] site yielding blades, points, scrapers and burins.

IAR 1970-1.

Belavadi, Dt Mysore. Cairn circles [4.17.8].

IAR 1962-3.

Belavanki, Dt Dharwar. Neolithic [4.6.9]-Chalcolithic [4.14.8] site yielding grey ware sherds of BRAHMAGIRI fabric.

IAR 1966-7.

Belekeri, Dt Karwar. Mesolithic [4.5] site yielding scrapers, points, flakes, blades, etc.

IAR 1972-3.

Beleshwar, Dt Bharuch. Mesolithic [4.5] site.

IAR 1971-2.

Belgaon-Bhoyar, Dt Chanda. Palaeolithic [4.2-4] site.

IAR 1960-1.

Belgatti, Dt Dharwar. Megalithic stone circles [4.17.8].

IAR 1960-1.

Belgaum, Dt Belgaum. Black-and-red [11.15.3] and Russet-coated Painted [11.22] Wares, two lead coins [3.1] with indistinct legends in Brāhmī script of the 1st-2nd century A.D. and a glazed gadrooned bead.

IAR 1963-4.

Belhar Jungle, Dt Basti. Sherds of PGW [11.14], plain grey, NBPW [11.16] and painted red wares were found along the Ami river within the protected limits of the site of Belhar Jungle about 11 km from Nandaur.

IAR 1967-8.

Beli Diawar (31°00'; 70°40'). See SIRSA VALLEY.

Belkeri, Dt Dharwar. Early historical [4.18.11] site. See HANDIGNUR.

IAR 1958-9.

Bellagodhal, Dt Bellary. Neolithic [4.6.9] site.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, pp. 77-8.

Bellaguppa, Dt Bellary. Neolithic [4.6.9] site yielding celts, corn-crushers, flakes, shell ornaments and scrapers.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Bellandur, Dt Bangalore. Megalithic [4.17.8] site with port-holed cist.

Seshadri, M., 1956, *Stone-using Cultures of the Pre- & Protohistoric Mysore*, London, p. 60.

Bellarapalli, Dt Dharmapuri. Megalithic tombs [4.17.9].

IAR 1965-6.

Bellary, Dt Bellary. Lower Palaeolithic [4.2] and Chalcolithic [4.14.8] site.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 77.

Bellatti, Dt Dharwar. Dolmen [4.17.8] and early historical [4.18.11] remains.

IAR 1960-1.

Belora (21°47'; 71°46'), Dt Rajkot. Late Harappa site [4.10] corresponding to RANGPUR II B and II C.

AI, 18 & 19, 1962 & 1963, p. 205.

Belpandhari, Dt Ahmadnagar. Tools of Series II (Middle Palaeolithic [4.3]) were found together with a number of fossilized animal bones and tools of Series I (Lower Palaeolithic [4.2]) occurred loose on Gravel II.

IAR 1955-6; 1959-60.

Belsettihal, Dt Gulbarga. Megalithic [4.17.8] site.

Megalithic Tombs & other Remains in the Deccan, Hyderabad, 1941.

Belur, Dt Mysore. Megalithic [4.17.8] site.

Information from C. Krishnamurthy through A. Sundara.

Belur¹, Dt Dharwar. Early historical [4.18.11] site. See HANDIGNUR.

IAR 1958-9.

Belur², Dt S. Kanara. Megalithic [4.17.8] site with port-holed chambers and pot burials.

Jour. Karnataka Univ., 1974, 10, p. 5.

Beluti, Dt Birbhum. Sherds of black-and-red ware [11.6.5], lustrous red ware painted in black and perforated pottery.

IAR 1963-4.

Beluvankudige, Dt Chikmagalur. Megalithic [4.17.8] site with cists.

Jour. Karnataka Univ., 10, p. 6.

Belvad, Dt Bijapur. Chalcolithic [4.14.8] site. See ALMEL.

IAR 1959-60.

Belwa, Dt Saran. Near the village is a mound locally known as Bhairo-ka-sthan which yielded ruins of a large temple assigned to the late medieval period and beneath it the remains of a much earlier temple not later than the 6th century A.D. The other large mound near the village yielded punch-marked coins [3.1], silver-coated copper pieces, copper coins of the Kushan dynasty and 11 terracotta seals.

ASI-AR, E. Circle, 1918-19, pp. 46-7.

Belwadag, Dt Ranchi. Asura site [14.4]. A Kushan coin [3.1] of Huviska, stone implements and beads were also found.

Roy, S.C., 1915, in *Jour. Bihar & Orissa Res. Soc.*, 1, pp. 230-4.

Beman, Dt Agra. PGW [11.14] site.

IAR 1959-60.

Benachamatti, Benachimatti, Dt Dharwar. Early Acheulian [4.2] implements and historical remains.

IAR 1963-4; 1964-5.

Benap, Dt Banas-Kantha. Harappa [4.9] site.

IAR 1966-7.

Benara, Dt Jaipur. Middle and Late Stone Age (Middle Palaeolithic [4.3] and Mesolithic [4.5]) site 30 km e. of Jaipur.

IAR 1971-2; Misra, V.N., 1978, in *Man & Environment*, 2, p. 74.

Benravadi, Dt Mysore. Cairn circles [4.17.8].

IAR 1962-3.

Benh-ki-Kot, Dt Varanasi. NBPW [11.16].

IAR 1963-4.

Beniganj, Dt Chhatarpur. Late Stone Age (Mesolithic [4.5]) site.

IAR 1965-6.

Benkanhalli¹, Dt Bijapur. Painted black-on-red pottery of the upper Deccan Chalcolithic [4.14.6]. See BALL-OLLI.

IAR 1957-8.

Benkanhalli², Dt Gulbarga. Ash mound [4.6.9].

Allchin, F.R., 1963, *Neolithic Cattle-keepers of S. India*, Cambridge, pp. 67-8. *Jour. Geological Surv. Hyderabad*, 4, 1, p. 54.

Benkankonda, Dt Dharwar. Early historical [4.18.11] site. See ANVERI.

IAR 1959-60.

Benkankop, Dt Dharwar. Neolithic [4.6.9] site in the MALAPRABHA VALLEY.

IAR 1969-70.

Bennavara, Dt Kolar. Megalithic [4.17.8] site with stone circles and cists.

Information from C. Krishnamurthy through A. Sundara.

Bennihalla river, Dt Dharwar. Palaeoliths were found in the alluvial gravels of the Bennihalla, about 4-5 km above the junction with the MALAPRABHA.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Benurajagarh, Dt Midnapur. Microliths [4.5].

IAR 1961-2.

Berachampa. See CHANDRAKETUGARH.

Beran, Dt Junagadh. Microlithic [4.5] site.

IAR 1954-5.

Berawan, Dt Ujjain. Historical site.

IAR 1971-2.

Berikhera, Dt Jind. Late Harappa [4.10] site comparable to MITATHAL II B.

Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 125.

Beripada, Dt Dhule. Microliths [4.5].

IAR 1958-9.

Berwara, Dt Jhansi. Palaeolithic and microlithic [4.2, 5] site.

IAR 1963-4.

Besnagar ($23^{\circ}32'$; $77^{\circ}48'$), Dt Vidisha, ancient Vidiśā (nagara), the ruins lying 3 km to the n.-w. of modern Vidisha, renowned in ancient literature as the capital of Ākara and Daśārṇa and as a centre of cultural activities, with trade routes passing through it. The ruins, 7 km in circuit, with suburbs extending about a km beyond, are gridled by the Betwa and Bes on three sides and protected by a fortification wall with a moat on the w. Cunningham, 1880, discovered a stone pillar, now famous as the Heliodoros pillar, the inscription on which was deciphered by Marshall and others. Some excavation was done by Lake, 1910, who found an octagonal pillar fragment with the inscription *pāsādottama*, and by Bhandarkar, 1914-5, who reported the discovery of open and solid railings, a canal of 'Mauryan' bricks, a *yajña-kunḍa*, a hall and a *stūpa*.

More systematic excavations from 1963-5 by the writer (IAR 1963-4, p. 16; 1964-5, p. 19) brought to light the following sequence of cultures: Pd I A, with pre-pottery non-geometric microliths; [4.5]; Pd I B, with pre-pottery geometric microliths; Pd II A, Chalcolithic [4.14.5]; Pd II B, Chalcolithic but with the PGW [4.15]; Pd III A, pre-NBPW; Pd III B, NBPW [4.18.1]; Pd III C, Śuṅga-Sātavāhana; Pd IV A, Nāga-Kushan; Pd IV B, Kṣatrapa-Gupta; Pd V, late historical; and Pd VI, medieval and modern.

Out of 220 microlithic tools, flakes and cores, 60 are from Pd I A, in which the cores are irregular and the tools without retouch. Pd I B has six each of triangles and trapezes, some of which are retouched, the other types being short blades and points. On the analogy of either Mesolithic sites [4.5], the Pd may be dated to c. 5000 B.C.

A 50 cm thick sterile layer separates Pd I from Pd II, with three subphases, all with typical Chalcolithic material consisting of microliths, black-painted red ware, white-painted ware and plain black-and-red ware [11.6],

fine grey ware and coarse red ware (red ware 70%, black-and-red ware 25% and grey ware 5%), terracotta bulls, paste beads and ivory pendants. Only one type of post-firing graffito [20.1], numbering one or more, is frequent on the black-and-red ware. A Neolithic celt, triangular in shape and thin in section, a solitary copper rod and most of the beads come from the upper levels, though typical Neolithic pottery, a few with simple incised decorations, continue down to the mid-levels, below which there is a rarity of beads but an abundance of terracotta bulls. A stone ball, a terracotta dabber [16.12] and a channel spout [11.10] belong to the mid-levels.

A large number of post-holes forming circular or rectangular plans have been noticed. The posts of the mid-levels were strengthened with lumps of clay and the floors were made of brick jelly, lime or clay. A part of the habitation appears to have been burnt down.

The dates of the lower and upper limits of the Chalcolithic deposit may be worked out as c. 1800 to 900 B.C. on the analogy of KAYATHA and other Chalcolithic sites of c. India [4.14.5] and the upper Deccan [4.14.6].

While Pd III A is marked by the continuity of the black-and-red ware and by the presence of a negligible quantity of iron, the ^{14}C dates being 2420 ± 105 , 2350 ± 100 and 2260 ± 140 B.P., Pd III B has punch-marked [3.1] and Vedisā city-state coins, terracotta mother goddesses [12.6], a large number of iron objects and the NBPW. The subsequent Pds can be dated on the basis of coins, inscribed seals and associated finds.

An elliptical temple of c. 4th-3rd century B.C., consisting of a *garbha-grha*, *pradakṣiṇā-patha* (both elliptical), *antarāla* and *mukha-maṇḍapa*, had a brick plinth and superstructure of wood, thatch and mud. After its damage by flood another temple was constructed over an earthen platform enclosed with coursed stone. To the e. seven pillars, six of them in alignment with the Heliodoros pillar mentioned above and the seventh in front of the central pillar, all of them firmly set on thick stone basal slabs and fixed by steel wedges, were exposed. The temple, evidently of Vāsudeva referred to in the inscription on the Heliodoros pillar, was contemporary with the pillars.

Bhandarkar, D.R., 1914-15; ASI—AR 1914-15. Cunningham, A., 1880. ASI—AR, 10, pp. 38-9. Lake, 1910, in *Jour. Bombay Branch Royal Asiatic Soc.*, 23.—M.D. KHARE

Betala, Dt Bhandara. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1959-60.

Bet Dwarka, Dt Jamnagar. Remains of the late Harappa [4.10], post-Harappa, early historical and medieval settlements were found.

IAR 1959-60.

Bettadpur, Dt Mysore. Port-holed cists [4.17.8].

Mysore Arch. Report, 1943, p. 34.

Bettamugalam, Dt Dharmapuri. Megalithic site with dolmenoid cists and circle stones [4.17.9].

IAR 1967-8.

Betthar, Dt Unnao. NBPW [11.16].

IAR 1962-3.

Betwa valley, Dt Jhansi. Middle Palaeolithic [4.3] tools and a few handaxes and choppers.

IAR 1959-60.

Bevinhala, Dt Raichur. Chalcolithic [4.14.8] site.

Karnataka Bharati, 6, 1, pp. 64-75.

Bhabri, Dt Saharanpur. Late Harappa [4.10] and OCW [4.12] site.

IAR 1967-8.

Bhadahwan-Pahar, Dt Varanasi. Cairn circles and dolmenoid cists [4.17.3]. At the foot of the hill was a deposit of microliths [4.5] without pottery. cf. HATHINIA.

IAR 1962-3. Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad, pp. 54, 79-81.

Bhadaria, Dt Junagadh. Red Polished Ware [11.23] site.

IAR 1954-5.

Bhadasa, Dt Gurgaon. PGW [11.14].

IAR 1954-5. Suraj Bhan, 1975, *Excavations at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 126.

Bhadas Khera, Dt Gurgaon. Late Harappa [4.10] site.

Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.

Bhadauli, Dt Varanasi. Black-and-red ware [11.6.3].

IAR 1962-3.

Bhadauni, Dt Gaya. NBPW [11.16].

IAR 1963-4.

Bhadgaon. See RAYPUR and BHADGAON.

Bhadla, Dt Ambala. The site yielded OCW [11.5] in a fluvial deposit and is reported to have yielded a hoard of copper implements [4.11] including harpoons, flat celts and a ring.

Bisht, R.S., 1976, in *Arch. Congress & Seminar*, 1972, Kurukshetra.

Bhadli, Dt Kutch. Historical site. See AJMEL.

IAR 1965-6.

Bhadne, Dt Dhule. Lower Palaeolithic [4.2] and microlithic [4.5] site. Chalcolithic remains [4.14.6] were also found.

IAR 1961-2. Gururaja Rao, B.K., ed., 1978, *Decade of Arch. Studies in s. India*, Dharwar, p. 20.

Bhadora¹, Dt Jabalpur. Middle Palaeolithic [4.3] site.

IAR 1968-9.

Bhadora², Dt Mirzapur. Early Stone Age (Lower Palaeolithic [4.2]) tools in the bed of the Umrar-nadi.

IAR 1962-3.

Bhadra, Dt Ganganagar. An extensive mound in DRŠADVATĪ VALLEY yielding Harappa [4.9], Late Harappa [4.10] and early historical red wares including Rang Mahal Ware [11.24].

IAR 1972-3.

BhadraiahanaHalli, Dt Mysore. Megalithic cist burials [4.17.8].

IAR 1961-2.

Bhadrakali-3, Dt Ganganagar, PGW [11.14] and Rang Mahal [11.24] site.

Unpublished.

Bhadrar, Dt Kanpur. NBPW [11.16] besides sherds of red and brownish wares.

IAR 1963-4.

Bhadreshwar, Dt Kutch. Middle Palaeolithic [4.3] and historical site.

IAR 1970-1.

Bhadsa, Dt Kanpur. NBPW [11.16].

IAR 1964-5.

Bhadue. See KAN VALLEY.

Bhadvad-Kurd, Dt Dhule. A sequence of deposits from the Late Acheulian [4.2] to the Late Stone Age (Mesolithic [4.5]) was noticed. Chalcolithic habitation and burial remains [4.14.6] were also found.

IAR 1961-2.

Bhadvi, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1961-2.

Bhagabandh, Dt Midnapore. Microliths and flakes [4.5].

IAR 1961-2.

Bhagadeh Ramana, Dt Palamau. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1971-2.

Bhagan, Dt Rohtak. Early historical site.

Jour. Haryana Studies, 3, 1, p. 6.

Bhagatray, Dt Bharuch, on the river Kim, the s. most known coastal settlement of the Harappa culture with a 2.25 m high mound, excavated by S.R. Rao of the ASI. Pd I A represents the mature Harappa culture [4.9] with sturdy black-painted red and chocolate over buff ware, the types being the dish-on-stand, dish with a carinated shoulder and expanded rim, heavy jar with a projected rim, basin, convex-sided bowl, goblet and beaker. Besides there were parallel-sided blades, a disc bead of steatite, biconical beads of carnelian and faience, a terracotta humpless bull and indeterminate copper objects. Pd I B has the late Harappa [4.10] pottery. Pd II is medieval.

Rao, S.R., 1962 & 1963, in *AI*, 18 & 19, p. 205.

Bhagavatikere, Dt Shimoga. Neolithic [4.6.9] implements.

IAR 1972-3.

Bhagesar, Dt Allahabad. Late Stone Age (Mesolithic [4.5]) site.

IAR 1963-4.

Bhaghaul-ka-Kot, Dt Ghazipur. Black-and-red ware [11.6.3].

IAR 1963-4.

Bhagrapir, Dt Mayurbhanj. A copper double-axe [6.2] was found.

Campbell, A., in *Jour. Bihar & Orissa Res. Soc.*, 2, pp. 386-7.

Bhagtana-Bohorwala, Dt Gurdaspur. Early historical remains. See ACHAL-SAHEB.

IAR 1961-2.

Bhagwadi, Dt Gulbarga. Megalithic [4.17.8] site with dolmens.

Jour. Geological Surv. Hyderabad, 5, 1, p. 56.

Bhagwanpura¹, Dt Chittaurgarh. Black-and-red ware [1.6.2] site. It also yielded black-on-red painted sherds with various designs, such as horizontal bands, cross-hatched diamonds enclosed by horizontal bands and dots between vertical lines. Of significance are the dishes of grey ware with straight sides and incurved rim of the type found in Pd III of HASTINAPURA.

IAR 1957-8.

Bhagwanpura² (30°4'; 76°57'), Dt Kurukshetra, on the right bank of the SARASVATĪ, excavated in 1976-7 by the author on behalf of the ASI, revealing a twofold sequence of cultures, Sub-pds I A and I B within a deposit of 2.7 m and showing the interlocking of the late Harappa [4.10] with the PGW [4.15] cultures in the later life of the occupation of the site. In Sub-pd I A the late Harappans, the first to establish themselves on the alluvial deposit, raised solid mud platforms in two successive phases as a flood-preventive measure. One such platform, 10 × 4.25 m, exposed in one of the trenches, has a landing step. The site was twice damaged by floods, the second one when the PGW people were living here alongside the late Harappans in Sub-pd I B.

The pottery of Sub-pd I A is comparable with the late Harappa types of BARA, BAHADRAD, SISWAL II B, MITATHAL II B, DAULATPUR and RAJA-KARNA-KAQILA. While the goblet is found there is no beaker or perforated jar. Painted and incised red ware is reminiscent of Fabric D of KALIBANGAN I. Some pots have Harappa graffiti [20.1]. A red terracotta humped bull and a grey-to-black terracotta fragment of the leg portion of a human figure are notable. Copper rods and pins, beads of faience and terracotta and pins of bone are the other interesting objects.

Stratigraphically there is no break between Sub-pds I A and I B, there being in the latter a continuity of occupation by the late Harappans and the arrival of the PGW people. When a deposit of 15 to 20 cm had accumulated a major part of the site was damaged by flood, but the site was re-occupied by both the people.

In this phase of overlap, Sub-pd I B, there is evidence of round or semicircular huts, one of which has yielded four querns and pestles [6.19] of different types. At the next stage houses are built of mud wall, a complete house with 13 rooms, varying from 1.60 × 1.60 to 3.35 × 4.20 m in size, with a courtyard having been exposed. The finds from these houses include animal bones, dishes and bowls of the PGW, terracotta beads, bone styli [20.5] and copper objects, besides a small quantity of late Harappa pottery. The third structural phase is associated with houses of baked brick of different sizes,

damaged by heavy cultivation, but the bricks *in situ* measure 20 × 12 × 8, 12 × 12 × 8, 29 × 22 × 12.5 (wedge-shaped), 20 × 20 × 8 and 16 × 12 × 4 cm, some with deep finger marks. Two oval structures of burnt brick, 180 × 85 to 160 × 92 cm, are associated with this phase. They have yielded burnt earth, a few pieces of red ware including a dish-on-stand, uncharred bones and burnt fragments of a domical roof. A legged terracotta has been found in the working level of one of the structures.

Two graves, one of an adult and the other of a child, have been found located in the habitation area itself. Both the skeletons with the heads to the n. are without grave goods.

Beside the late Harappa pottery and other antiquities in the Sub-pd, the PGW, grey ware, other associated ware and a limited quantity of the Black-slipped Ware [11.13] are available. In the early and middle levels of the Sub-pd some PGW specimens have designs in thick lines. The design repertoire is very rich. For the first time are seen the Maltese cross and intersecting circles resulting in six- or four-petalled flowers and geometric designs make their appearance. It has also been noticed that a few late Harappa shapes, for example the bowl, basin, dish, dish-on-stand and jar have been copied in grey ware.

Terracotta anthropomorphic figures, wheeled rams, birds, dogs, cart-wheel with or without hubs, ear ornaments, violin-shaped mother goddess [12.6] made of grey ware pieces, copper bangles and a large number of terracotta *ghata*-shaped beads are among the important finds in the Sub-pd. Also remarkable are the bones of *Equus caballus* Linn. There is no iron in this or the preceding Sub-pd.

That there is an overlap of two cultures here as also at DEDHERI, KATPALON, MANDA and NAGAR is quite clear and shows a fusion of the two extending from Jammu to Haryana.

—J.P. JOSHI

Bhagwansar, Dt Ganganagar, with four mounds, marked 1 to 4. Rang Mahal pottery [11.24], small votive tank [12.11], terracotta and shell bangles and beads from Bhagwansar-1; Rang Mahal Ware, shell bead and bangles from Bhagwansar-2; Harappa [4.9] objects, painted and unpainted Rang Mahal ware and terracotta and shell bangles from Bhagwansar-3; and Harappa objects, painted and unpainted Rang Mahal ware, shell bangles and faience [16.6] bead from Bhagwansar-4. See SARASVATĪ VALLEY.

Unpublished.

Bhaijukheri, Dt Ujjain. Early historical site.

IAR 1971-2.

Bhaikotalia, Dt Panch Mahals. Mesolithic [4.5] site on the bank of the river Mahi.

IAI 1972-3.

Bhainsa, Dt Deoria. NBPW [11.16] site.

IAI 1962-3.

Bhainsahawa, See CHANDRAPRABHA VALLEY.

Bhainsaur, Dt Mirzapur. See BAGHAI KHOR, LEKHAHIA, MORHANA PAHAR.

Bhainsawal, Dt Jaipur. OCW [11.5] and PGW [11.14] site.

IAI 1972-3.

Bhainsiagaon, Dt Mandla. Middle Stone Age (Middle Palaeolithic [4.3]) tools and microliths [4.5].

IAI 1963-4.

Bhainsrorgarh, Dt Chittaurgarh. Two implement-bearing deposits were noticed near Bhainsrorgarh respectively situated on the left banks of the Chambal, at Navghat, and of the Bamini, a tributary of the Chambal. These deposits consisted of a thick layer of conglomerate at the bottom, a thin layer of loose gravel and metamorphosed shale and lastly a thick layer of loose gravel with heavy angular pebbles and coarse sand. The conglomerate yielded tools of Series I (Lower Palaeolithic [4.2]) besides four flake tools of Series II (Middle Palaeolithic [4.3]), pointing thereby to an overlap between the two series. In the layer of loose gravel and shale were found a handaxe, a cleaver and a scraper of the Acheulian industry showing that even this industry had been on the decline and Series II industry had come to stay. The uppermost gravel layer yielded a few Levallois flakes and blade-scrappers, falling within the range of Series II.

IAI 1956-57.

Bhaintari, Dt Moradabad. PGW [11.14] and NBPW [11.16] besides black-slipped [11.13], red and chocolate-slipped red wares.

IAI 1963-4.

Bhaira, Dt Bijapur. Megalithic monuments [4.17.8].

IAI 1962-3.

Bhairanahatti, Dt Dharwar. Neolithic [4.6.9] site.

IAI 1968-9.

Bhairangi, Dt Bijapur. Painted black-on-red Chalcolithic pottery [4.14.8]. See BALLOLLI.

IAI 1957-8.

Bhairapur, Dt Gulbarga. Megalithic [4.17.8] site.

Jour. Hyderabad Geological Surv. 4, 1, p. 157.

Bhairavakonda, Dt Ongole. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAI 1970-1.

Bhairavanapada, Dt Dharwar. Megalithic [4.17.8] site, largely with circles and passage chambers.

Jour. Karnataka Univ., 8, pp. 1-8. *Progress of Kannada Res. in Bombay State, 1947-52, 1953*, p. 22. Sundara, A., 1975, *Early Chamber Tombs of S. India*, Delhi, pp. 43-5.

Bhausa-Mafi, Dt Basti. Black-and-red ware [11.6.3].

IAI 1963-4.

Bhajodi, Dt Kutch. Lower Palaeolithic [4.2] site.

IAI 1967-8.

Bhaklana, Dt Hissar. PGW [11.14], black-slipped ware [11.13] and early historical ware.

Silak Ram, 1972, unpublished thesis, Kurukshetra Univ.

Bhaktabandh, Dt Bankura. Two shouldered celts and a pick-like object of copper [4.11].

Purātattva, 9, 1979.

Bhakuadih, Dt Ranchi. Microliths [4.5].

IAI 1960-1.

Bhalaumi, Dt Ahmadnagar. Early historical [4.18.9] site characterized by black-and-red and red wares.

IAI 1960-1.

Bhalaut, Dt Rohtak. Early historical material was found at Bhalaut-I (Dabha ala) and Bhalaut-II (Unta Khedi)

Jour. Haryana Studies, 3, 1, p. 4.

Bhaldaria, Dt Mirzapur. Painted rock-shelters [13].

Ghos, M., 1932, *Rock-paintings & other Antiquities*, Mem. ASI, 24.

Bhaler, Dt Dhule. Mesolithic [4.5] site.

IAI 1960-1.

Bhalgam (22°02'; 71°05'), Dt Rajkot. Late Harappa [4.10] site corresponding to RANGPUR II B.

AI, 18 & 19, 1962 & 1963, p. 205.

Bhalgaon¹, Dt Ahmadnagar. Tools of Series II (Middle Palaeolithic [4.3]) and occasionally Series I (Lower Palaeolithic [4.2]).

IAI 1959-60.

Bhalgaon², Dt Aurangabad. A Late Stone Age (Mesolithic [4.5]) site at the foot of a hill. In close vicinity was located a Chalcolithic [4.14.6] site yielding burnished grey ware of the BRAHMAGIRI fabric, black-painted red ware of the Jorwe fabric [11.11] black-and-grey ware a sherd of the Malwa fabric [11.10], fluted cores with crested-guiding ridge [16.15.2], a few retouched blades and parallel-sided blades.

IAI 1961-2.

Bhalitundi, Dt Dhenkanal. Lower Palaeolithic [4.2] site.

Mohapatra, G.C., 1962, *Stone Age Cultures of Orissa*, Poona, p. 39.

Bhalgi, Dt Bidar. Early historical [4.18.11] site.

Karnataka Bharati, 11, 3.

Bhalochia, Dt Ganganagar. PGW [11.14] and Rang Mahal [11.24] site. See SARASVATĪ VALLEY.

Unpublished.

Bhaludungri, Dt Sundargarh. Series II (Middle Palaeolithic [4.3]) tools.

IAI 1957-8.

Bhamadia, Dt Bharuch. Stone tools, cores, scrapers and flakes.

IAI 1964-5.

Bhamakdal (21°45'; 70°50'), Dt Amreli. Late Harappa [4.10] site corresponding to RANGPUR II B.

AI, 18 & 19, 1962 & 1963, p. 205.

Bhamaria, Dt Panch Mahals. Microlithic [4.5] site.

IAI 1970-1. Sonawane, V.H., 1976, in *Arch. Congress & Seminar, 1972*, Kurukshetra.

Bhambori, Dt Ahmadnagar. Early Stone Age (Lower Palaeolithic [4.2]) tool was found.

IAI 1966-7.

- Bhamer**, Dt Dhule. Palaeolithic [4.2] and Chalcolithic [4.14.6] habitation site. Neolithic flakes and hammer stones were also collected.
IAR 1960-1.
- Bhamiara**, Dt Panch Mahals. See CHAMPANER.
- Bhamiwara**, Dt Nagpur. Early historical site. Tools of the Middle Stone Age (Middle Palaeolithic [4.3]) and microliths [4.5] were also found.
IAR 1961-2.
- Bhamragarh**, Dt Chanda. Early Stone Age (Lower Palaeolithic [4.2]) tools.
IAR 1961-2.
- Bhandara**, Dt Bhandara. Series II (Middle Palaeolithic [4.3]) tools.
IAR 1959-60.
- Bhandei**, Dt Pali (wrongly stated to be Marwar). Site on the river Guhiya with Series II (Middle Palaeolithic [4.3]) tools.
IAR 1958-9.
- Bhandigani**, Dt Shimoga. Megalithic [4.17.8] site with chamber tombs.
Karnataka Bhurati, 8, 2, pp. 10-11.
- Bhangankhali**, Dt 24-Parganas. Site on the river Matta yielding Śunga-Kushan pottery.
IAR 1968-9.
- Bhangargund**, Dt Bijapur. Microliths [4.5].
IAR 1961-2.
- Bhangarh**, Dt Alwar. A Palaeolithic [4.2-4] site on the banks of the Sanwan Nadi, an affluent of the Chambal. The n. bank has a basal cemented gravel superimposed by silt, while the s. shows two cycles of implement-bearing gravel beds alternating with silt deposits. Broken blocks of cemented gravel lie strewn in the pebbly bed of the river. The industry is mainly of the Abbevillio-Acheulian type of which a development, up to the emergence of Levalloisean tools, appears to be available in the various horizons.
IAR 1955-6.
- Bhangda**, Dt Dhule. Palaeolithic tools (of unspecified nature).
IAR 1959-60.
- Bhangel-Begumpur**, Dt Bulandshahr. Early historical and medieval site.
IAR 1963-4.
- Bhangor** (22°05'; 69°52'), Dt Jamnagar. Post-Harappa [4.10] and Lustrous Red Ware [11.9] site, corresponding to RANGPUR II C and III.
AI, 18 & 19, 1962 & 1963, p. 205.
- Bhangsimala**, Dt Panch Mahals. Mesolithic [4.5] site.
IAR 1970-1.
- Bhanjgarh**, Dt Sundargarh. Series II (Middle Palaeolithic [4.3]) tools.
IAR 1957-8.
- Bhanki-Tekri**, Dt Sehore. Microliths [4.5] from painted rock-shelters [13].
IAR 1963-4.
- Bhankror**, Dt Saharanpur. Śunga-Kushan and medieval pottery.
IAR 1964-5.
- Bhanraria**, Dt Purulia. Tools of Series I (Lower Palaeolithic [4.2]) and microliths [4.5].
IAR 1959-60.
- Bhantnur** (16°15'; 75°26'), Dt Bijapur. Lower [4.2] and Middle Palaeolithic [4.3] and Chalcolithic [4.14.8] site. See GHATAPRABHA VALLEY.
IAR 1959-60.
- Bhanwant**, Dt Mainpuri. PGW [11.14] and NBPW [11.16] site.
IAR 1961-2.
- Bhanwarsena**, Dt Rewa. A few Early Stone Age (Lower Palaeolithic [4.2]) tools were found in a highly rolled condition.
IAR 1961-2.
- Bhanwar Theri**, Dt Ganganagar. Painted and unpainted Rang Mahal Ware [11.24] and pottery mould [16.10]. See SARASVATĪ VALLEY.
Unpublished.
- Bhanwat**, Dt Mainpuri. Site yielding PGW, [11.14], NBPW [11.16] and black-and-red [11.6.3] ware.
IAR 1970-1.
- Bhapel**, Dt Sagar. Four rock-shelters [13].
Pandey, S.K., unpublished thesis.
- Bhapson**, Dt Sagar. Palaeoliths and microliths [4.5].
IAR 1960-1.
- Bharadia**, Dt Bharuch. Middle and Late Stone Age (Middle Palaeolithic [4.3] and Mesolithic [4.5], tools.
IAR 1969-70.
- Bharariwal**, Dt Amritsar. Coarse grey, Black-slipped Ware [11.13] and plain red and Śunga-Kushan red wares.
IAR 1964-5.
- Bhar-ka-Bhita**, Dt Sultanpur Mound near village Ghanpur on the left bank of the Gomati, yielding sherds of black-and-red ware [11.6.3], NBPW [11.16] and plain grey ware.
IAR 1968-9.
- Bharatpur**¹, Dt Aligarh. Black-and-red ware [11.6.3] and PGW [11.14].
IAR 1962-3.
- Bharatpur**² (23°24'; 87°27'), Dt Burdwan, a small village on the left bank of the Damodar, not far from the Mesolithic site of BIRBHANPUR. Excavation conducted from 1972 to 1974 revealed four cultural periods from the Chalcolithic phase to the late historical period with breaks at intervals. The earliest Chalcolithic [4.14.4] settlers of Pd I depended largely on hunting and fishing while practising an incipient form of agriculture. They used microliths, tiny Neolithic celts, bone tools, steatite beads and copper objects. Their ceramics included the black-and-red ware [11.6.5], plain or painted in white, black-painted and white-painted red wares and a few handmade pots. Their shapes agree with the Chalco-

lithic pottery of other excavated sites of W. Bengal. The presence of a few pieces of reed-impressed burnt-clay plaster indicates that the inhabitants lived in huts of perishable material. Large hearths of open variety are also present. A charcoal sample from the mid-level of the Pd has been dated to c. 15th century B.C. by ^{14}C method. The settlement had therefore an earlier beginning, thus making the Chalcolithic culture of W. Bengal a close contemporary of the Malwa culture [4.14.5].

Pd I gradually merged into the early historical period, Pd II, marked by the emergence of iron implements. There is no vital change in the pattern of life or the articles of everyday use. The ceramic tradition of the preceding period continues with a degeneration in fabric. The upper level of this Pd yielded the NBPW [11.16] along with a few associated black-slipped ware [11.13].

Thereafter the site remained deserted for a long time. The next Pd, III, is distinguished by the presence of a burnt-brick structure of which a few courses of the foundation were encountered. For want of any concrete evidence no firm date can be assigned to this short-lived Pd.

Pd IV which commenced after a break witnessed the construction of a Buddhist *stūpa* of fine brickwork laid in lime-*surkhi* mortar. Its surviving 13 m sq platform is relieved with projections and recesses. The facades are luxuriantly treated with corbelled courses, mouldings and false *caitya*-window motifs of floral designs. Above the corbelled courses the platform is provided with niches, one on each projection, to accommodate an image of Buddha. At a later phase the *stūpa* was repaired and plastered all over with shell-lime except for the lowest five courses of the plinth which must have been by then covered by debris. Of the antiquities five stone images of Buddha seated in *bhūmi-sparśa-mudrā* which adorned the niches deserve mention. On stylistic grounds they are ascribable to the 9th-10th century.

—S.K. MUKHERJEE

Bharbhut, Dt Bharuch. Early historical to medieval site.
IAR 1967-8.

Bhargain, Dt Etah. NBPW [11.16] site.
IAR 1959-60.

Bharhut, Dt Vadodara. Early historical site.
IAR 1966-7.

Bhari, Dt Chandrapur. Early and Late Stone Age (Lower Palaeolithic [4.2] and Mesolithic [4.5]) site.
IAR 1970-1.

Bharkacha. See 4.6.3.

Bharni, Dt Tonk. Microliths [4.5].
IAR 1958-9.

Bharuch, Broach (22°42'; 72°50'), headquarters of the Dt of the same name, ancient Bharukaccha or Bhrgukaccha and Barygaza of the classical geographers on the left bank of the Narmada: Excavation (IAR 1958-9, p.

69; 1959-60, p. 19) by K.V. Soundara Rajan of the ASI has revealed deposits of several Pds.

Pd I (Chalcolithic). The earliest available material, not found in the main excavation, has been discovered in the digging of the foundation of the local Law College. The ceramics, red ware, buff ware, etc., have affinity to the Chalcolithic cultures of w. India [4.14.6]. They are however found a little away from the main centre of Bharuch indicating a later shifting of the settlement.

Pd II (later half of the 1st millennium B.C.). The lowest strata from the town site have yielded the black-and-red ware [11.6], NBPW [11.16] and many plain types. The types in the black-and-red ware comprise the *lotū*-shaped pot, dish, bowl and lid, all devoid of painting. The sole NBPW sherd has a bevelled edge and copper pin revetment. Ring-wells [14.15] in clusters of five have been found in one of the cuttings on the inner fringe of the mud rampart. The other antiquities comprise a dozen bone arrowheads, pottery with moulded and stamped designs, terracotta discs [6.7.3], ear ornaments and gamesmen, beads of semiprecious stones and terracotta and shell bangles.

Pd III (beginnings of the Christian era to the 5th century A.D.). This Pd is characterized by the occurrence of fragments of the Red Polished Ware [11.23] associated with many of the well-known plain types in red as well as grey of early historical affiliation. The mud rampart appears to have been provided with a heavy brick revetment, which subsequently collapse. Among the antiquities may be mentioned terracotta skin rubbers [18.4], beads and decorated metal objects, shell bangles and stone sculptures, such as a *caturmukha-linga* in green jasper, besides lead and copper Ksatrapa coins of the 3rd century at the lowest and middle levels.

Pd IV (late historical and medieval). The ceramics of the Pd, which came into existence after a break, include medieval glazed ware, Ming (1368-1644) pottery, Celadon Ware [11.25] and coins. The sculptures and architectural pieces indicate a date of between the 6th to about the 13th century. The settlement was fortified during the later period. In addition there are standing monuments of the Sultans of Delhi and Ahmadabad.

This site is heavily populated so that it is not possible to excavate in larger areas for a detailed study.

—R.N. MEHTA

Bharvalia, Dt Gorakhpur. NBPW [11.16] site.
IAR 1963-4.

Bharvilva-babu, Dt Basti. NBPW [11.16] site.
IAR 1963-4.

Bharwada, Dt Junagadh. Red Polished Ware [11.23].
IAR 1957-8.

Bhatala, Dt Chanda. Palaeolithic site [of unspecified nature].
IAR 1960-1.

Bhataola, Dt Bulandshahr. Early historical site.

IAR 1962-3.

Bhategaon, Dt Parbhani. Late Stone Age (Mesolithic [4.5]) site.

IAR 1970-1.

Bhatkuli (20°50'; 77°35'), Dt Amravati, located about 16 km s.-w. of the District town and 2 km from the village. It has been identified with Bhojakata the capital of the Bhojas mentioned in a Bharhut inscription and a 4th-century copper-plate of the Vākātaka ruler Pravarasena II. Traditionally it is supposed to have been founded by Rukmin, the brother of Kṛṣṇa's wife Rukmiṇī. Archaeologically its antiquity does not go beyond the early historical period as is evident from the black-and-red pottery and other objects which lie scattered on the surface. Though no systematic excavation has been undertaken, M.G. Dikshit while excavating KAUNDINYAPUR appears to have done some section scraping in order to examine the stratigraphy. Among other objects he found in the early historical levels a few fragments of Roman clay bullae [6.4] and some remains of charred grains identified as *jowar* (*Sorghum* sp.) and *chana* (chick pea, *Cicer arietinum*), the latter supposed to be the earliest record of the species in India [2.5.2].

In the village there are Jaina relics including a temple of Rṣabhanātha with an inscription the date of which can be read as Śaka 1156.

Gokhale, S., 1965, in *Sri Atisaya Samsthana*, Nov. 1965, pp. 5-7. Vishnu-Mittre & Gupta, H.P., 1968-9, in *Purātattva*, 2, pp. 21-22 (for plant remains).—M.K. DHAVALIKAR

Bhatla¹ (Jaggala), Dt Hissar. Early historical site.

Silak Ram, 1972, unpublished thesis, Kurukshetra Univ.

Bhatla² (Motiala), Dt Hissar. PGW [11.14] site.

Silak Ram, 1972, unpublished thesis, Kurukshetra Univ.

Bhatol, Dt Hissar. Early historical site.

Silak Ram, 1972, unpublished thesis, Kurukshetra Univ.

Bhat-Pachalana, Dt Ujjain. Early historical site.

IAR 1971-2.

Bhatpur, Dt Ahmadnagar. Microlithic [4.5] site.

IAR 1971-2.

Bhatpura¹, Dt Bulandshahr. OCW [11.5] and potsherds of Harappa [11.3] affinities.

IAR 1960-1.

Bhatpura², Dt Saharanpur. PGW [11.14] and early historical site.

IAR 1964-5.

Bhatti, Dt Chanda. Pebble tools comprising choppers and early Acheulian handaxes [4.2].

IAR 1962-3.

Bhattiprolu (16°6'; 80°47'), Dt Guntur, a Buddhist site extensively despoiled in the last century, when in the course of the destruction the largest *stupa*-mound yielded a crystal relic casket [12.8] with some ashes, a few bits of gold leaf and a pearl. Rea, 1894, retrieved some architectural features of the same *stupa* together with three inscribed receptacles at different heights of

the central hole, variously containing crystal and beryl caskets with coins, beads, pearls, gold flowers, etc. One of the inscriptions mentions a ruler Kubiraka as one of the donors. The inscriptions have been dated from the second century B.C. to the first century A.D. by different scholars. In 1969-70 R. Subrahmanyam (IAR 1967-70, p. 1) revealed additional features of the *stupa* as also two wings of an attached monastery with a common front veranda and sherds of the Black-and-red [11.15] and Red Polished [11.23] Wares.

Mitra, D., 1971, *Buddhist Monuments*, Calcutta, p. 213. Rea, A., 1894, *S. Indian Buddhist Antiquities*, Madras.—I.K. SARMA

Bhatwar, Dt Allahabad. Megalithic [4.17.3] habitation and burial site on the bank of the Seoti. The main tomb type is the cist and cairn circles.

IAR 1966-7.

Bhaudi, Dt Hissar. Rang Mahal [11.24] site.

Silak Ram, 1972, unpublished thesis, Kurukshetra Univ.

Bhauri-ka-Kot, Dt Ghazipur. Black-and-red ware [11.6.3].

IAR 1963-4.

Bhavada, Dt Ahmadabad. Mesolithic [4.5] site.

IAR 1970-1; 1971-2.

Bhavanalpur, Dt Palamau. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1971-2.

Bhavanipada, Dt Dhule. Chalcolithic remains [4.14.6].

IAR 1958-9.

Bhavanipatna, Dt Kalahandi. Microliths [4.5].

IAR 1963-4.

Bhavan-Jharia, Dt Mirzapur. Black-and-red ware [11.6.3] and NBPW [11.16].

IAR 1962-3.

Bhavekal, Dt Pune. Late Stone Age (Mesolithic [4.5]) site.

IAR 1969-70.

Bhawani, Dt Gurdaspur. Early historical remains. See ACHAL-SAHEB.

IAR 1961-2.

Bhawanikhera, Dt Kurukshetra. Late Harappa [4.10] and PGW [11.14] site.

Kurukshetra Univ. Res. Jour., 10, 1976, pp. 28-9.

Bhawar, Dt Rohtak. Bhawar-I (Kheda) yielded PGW [11.14] and early historical material and Bhawar-II PGW.

Jour. Haryana Studies, 3, 1, p. 3.

Bhawasa, Dt Ujjain. Chalcolithic [4.14.5] site.

IAR 1971-2.

Bhawi, Dt Jodhpur. Site on the river Luni with Series II (Middle Palaeolithic [4.3]) tools.

IAR 1958-9.

Bhayakhakharia, Dt Jamnagar. Harappa Ware [11.3].

IAR 1957-8.

Bhedakui, Dt Midnapur. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1961-2.

Bhedeki (Mustahkaur), Dt Saharanpur. Late Harappa

[4.10] and OCW [4.12] site.

IAR 1967-8.

Bhedua, Dt Bankura. Painted black-and-red and bright-red wares besides microliths [4.14.4]. Series II (Middle Palaeolithic [4.3]) were found earlier.

IAR 1959-60; 1961-2.

Bhegli, Dt Bhavnagar. Red Polished Ware [11.23] site in the Shetranji valley.

IAR 1960-61.

Bheladih, Dt Santal Parganas. Microliths and black-and-red ware [11.6.4].

IAR 1963-4.

Bhengardih, Dt Purulia. Microliths [4.5].

IAR 1959-60.

Bheraghat, Dt Jabalpur. Palaeoliths including hand-axes, cleavers and choppers [4.2], scrapers [4.3], flake blades and microliths [4.5].

IAR 1958-9; 1960-1; 1964-5.

Bhetadiya Bhan-no-Timbo, Dt Ahmadabad. Early historical [4.18.2] site.

IAR 1967-8.

Bhetanda, Dt Jodhpur. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1959-60.

Bhikhampur¹, Dt Allahabad. Mesolithic [4.5] site. See BICHIA.

IAR 1971-2.

Bhikhampur², Dt Banda. Neolithic [4.6.3] site.

IAR 1970-1.

Bhikhampur³, Dt Jabalpur. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1960-1.

Bhikhampur⁴, Dt Varanasi. See CHANDRAPRABHA VALLEY.

Bhikampur-ka-Kot, Dt Ghazipur. Black-and-red ware [11.6.3].

IAR 1963-4.

Bhiladi, Dt Dhule. Microliths [4.5].

IAR 1959-60.

Bhilbhavali, Dt Dhule. Microliths [4.5].

IAR 1958-9.

Bhiljambholi, Dt Dhule. Chalcolithic [4.14.6] habitation site.

IAR 1959-60.

Bhilhera, Dt Raisen. Lower Palaeolithic [4.2] tools embedded in lateritic deposits and rock-shelters [13] were found at the site 25 km e. of Bhopal.

IAR 1966-7; 1967-8; 1968-9.

Bhilsudi, Dt Ujjain. Site yielding Kayatha Ware [11.7].

Wakankar, V.S., 1976, in *Arch. Congress & Seminar, 1972*, Kurukshetra.

Bhilsura, Dt Ujjain. The site with a well-preserved mound 9 km s. of Nagda produced the characteristic Palaeolithic [4.14.5] assemblage of painted red and black-and-cream wares and microliths including a fairly large

IAR number of fluted cores and parallel-sided blades.

Bhilwara, Dt Surat. Middle and Late Stone Age (Middle Palaeolithic [4.3] and Mesolithic [4.5]) site.

IAR 1971-2.

Bhimabandh, Dt Monghyr. A rich factory site of the Early Stone (Lower Palaeolithic [4.2]) Age about 5 km from Bhimabandh on the left bank of the Teparpani stream. A noteworthy feature was the absence of cleavers. Middle Palaeolithic [4.3] and Mesolithic [4.5] tools were collected from the neighbouring locality of Rehana also.

IAR 1960-1; 1962-3; 1965-6.

Bhimal, Dt Udaipur. Microlithic [4.5] site in the Karanpur-ki-nadi valley.

IAR 1962-3.

Bhimapar, Dt Ghazipur. The site located on the n. bank of the river Gangi yielded sherds of Black-slipped [11.13] Ware and grey (medium fabric) and associated red wares.

IAR 1965-6.

Bhimapurdih, Dt Ballia. Black-and-red ware [11.6.3] and NBPW [11.16] site.

IAR 1963-4.

Bhima river, Dt Pune. In stratified gravels at several sites along a stretch of 120 to 160 km along the river were found tools of Series II (Middle Palaeolithic [4.3]).

IAR 1956-7.

Bhima road bridge, Dt Gulbarga. Middle Palaeolithic [4.3] site.

IAR 1968-9.

Bhimbetka (70°37'; 22°50'), Dt Raisen, a complex of caves and rock-shelters in the Vindhya hills formed in the soft sandstone by natural weathering, located 45 km s. of Bhopal and 30 km n. of Hoshangabad, about 2 km south of the tribal village of Bhiyanpur which lies by the side of the Bombay-Itarsi-Delhi railway line, the Itarsi-Bhopal highway running parallel to it. The hill has over 200 caves and shelters [14.1.1] of varying sizes. Several other hills in the vicinity are equally rich in caves and shelters, and altogether there are over 1000 shelters over a length of 10 km from the village of Kari Talai in the e. to Jondra in the w. Over 500 of these shelters contain prehistoric and later paintings (13, also seen below) and a smaller but as yet indeterminate number preserve on their floors deposits of varying thickness of Stone Age man's habitation spanning the period from the Lower Palaeolithic [4.2] to the late Mesolithic [4.5].

The site was discovered by V.S. Wakankar of Vikram University, Ujjain, in 1957. The shelters have been divided into eight areas or groups (I-VIII). Each area has been divided into two or more subareas or clusters (A, B, C, etc.) and in each cluster the shelters have been individually numbered. Thus each shelter bears a three-tiered number, for example, III F-23. Limited digging in two shelters was done by K.D. Bajpai and S.K. Pandey of Saugar University in 1971 when they discovered

Mesolithic [4.5] deposits. Since 1972 systematic digging in several shelters has been done by the Vikram and Poona Univs. under the direction of V.S. Wakankar and V.N. Misra. During 1974 and 1975 Susanne Haas of the Museum für Völkerkunde, Basle, also excavated in three shelters.

Ecological setting. Bhimbetka is located in the midst of a dense deciduous forest. Over 30 species of trees and plants in the forest have edible flowers, fruit, seeds and tubers which are extensively exploited for food by the local rural populations, predominantly tribal. The forest is also rich in wild life which includes the antelope, several species of the deer, wild boar, sloth bear, leopard, hyena, fox, jackal, rabbit, scaly anteater and many species of birds. There are several perennial springs in the vicinity of the site which cater to the water requirements of the local human and animal populations. Bhimbetka thus has ample provision for the basic requirements of man—shelter, food and water, and a study of the cave sediments by S.N. Rajaguru shows that environment was not significantly different in the past. It is therefore no surprise that the site should have attracted hunting-gathering populations over a very long period of time.

Stratigraphy. The maximum deposit, 3-90 m, has been found in shelter III F-23 excavated from 1973 to 1976; the stratigraphy of this shelter can be taken to be fairly representative of the site. Briefly it is as follows.

Layer 1: 5-10 cm thick; dull-yellowish brown (10 YR 5/3 of Munsell colour chart); soft silty sand, poor in clay content; occasional angular stones. Geometric microlithic industry made on chalcedonic silica and a small quantity of quartzite flakes, blades and microblades associated with hammers, grinders and querns of basalt, occasional stone beads, small quantities of highly fragmentary sherds of plain red and grey ceramics and rare bone pieces.

Layer 2: 10 to 25 cm thick; dull-yellowish brown; slightly darker in colour than layer 1 (10 YR 4/3); finer in composition than layer 1; sandy silt and clayey silt. Cultural material as in layer 1 but without pottery and beads; the stone industry richer than in layer 1.

Layer 3: 10 to 20 cm thick; brown (7.5 YR 4/3); more sandy than layer 2 but not as sandy as layer 1; sandy silt, a characteristic feature of this layer being the presence of thin weathered stone chips almost all over the excavated area. However in the inner part of the cave the colour of the earth becomes lighter and quantity of stone chips declines. There is also a decline in the quantity of microlithic industry.

Layer 4: 15 to 20 cm thick; dull-brown (7.5 YR 5/4); more clayey than even layer 2; silty clay; more rock fragments than in any of the three upper layers. No microliths but quartzite flakes, blades, side scrapers,

end scrapers, etc., of the Upper Palaeolithic [4.4] or late Middle Palaeolithic [4.3] industry.

Layer 5: 40 to 50 cm thick; dull-reddish brown (5 YR 5/4; more reddish and more compact than layer 4; the proportion of stone fragments increases; finer sediments is silty sand; moist and sticky when freshly dug. A wide variety of side scrapers, less common but typical end scrapers, Levallois flakes [16.17.1] and blades; rare handaxes and cleavers [4.2] in lower 10 to 15 cm. Many tools made on thin flat natural stone slabs; artefacts have red staining; typical Middle Palaeolithic industry.

Layer 6: 80 to 90 cm thick; bright reddish-brown (5 YR 5/6); essentially similar to layer 5, visual distinction between the two not very marked; siltier and more compact than layer 5; size of stone blocks larger. Artefacts red-stained; Late Acheulian industry [4.2].

Layer 6: 80 to 90 cm thick; bright reddish-brown (5 YR 5/6); essentially similar to layer 5, visual distinction between the two not very marked; siltier and more compact than layer 5; size of stone blocks larger. Artefacts red-stained; Late Acheulian industry [4.2].

Layer 7: 90 to 100 cm thick; bright-reddish brown (5 YR 5/8); more reddish and far more compact than layer 6; difficult to dig; more deeply weathered, sometimes the core of the stone blocks turning to grey; very moist and sticky when freshly dug, coming out in large lumps; the finer component of the deposit more silty than in layer 6; the junction between this layer and layer 6 sharply marked; Late Acheulian industry.

Layer 8: 80 to 90 cm thick; orange (5 YR 6/6); very little of fine transported sediment; consists essentially of heavily weathered chips and blocks of argillaceous sandstone; mottled colour. No cultural material in the lower 30 cm; Late Acheulian industry.

No organic material or traces of fire have survived in the Palaeolithic layers because of the acidic nature of the sediments. In the Mesolithic layers however animal and human remains have been preserved though in a much disintegrated condition.

Raw material. The Palaeolithic industries are all made on metamorphosed sandstone (orthoquartzite) available in plenty all over the hill. A conscious choice is seen in the kind of quartzite used for two main categories of tools. Heavier tools like handaxes and cleavers are made of a dark-purple tough quartzite, rich in iron content and highly resistant to weathering. These tools have retained their fresh appearance and sharpness except for damage caused by use. For small tools like scrapers, denticulates and knives, made on flakes, a bright-yellowish quartzite has been used. This quartzite is softer and therefore tools made of it have suffered much weathering in the lowermost levels through contact with water that would seep from the top and accumulate at the base. At the very base of the deposit such tools are so much weath-

ered that they crumble into powder on exposure after being cleaned with water.

Cultural sequence. In cave III F-24 a few heavily weathered pebble tools of the chopper-chopping complex [4.2] were found in the bottommost layer separated from the Acheulian layer by a sterile deposit. In shelter III A-28 also a few pebble tools were found at the base, separated from the Mesolithic layer by a sterile deposit. However the number of such tools is small and their shape amorphous. Further evidence is needed to establish this phase on a sound basis.

Of all the cultural phases the Acheulian occupation deposit at Bhimbetka is the thickest, being 2-50 m in cave III F-23. Two other shelters, III F-24 and III A-30, have also yielded Acheulian remains. There are successive floors paved with stone boulders and slabs. On these floors lie littered large quantities of stone implements in various stages of manufacture and use. A number of tools, specially cleavers and handaxes, are broken into pieces or have their edges damaged in varying degrees. This shows that the tools were not only manufactured within the cave but were also used there.

The Acheulian industry is dominated by flake tools like side scrapers, end scrapers, denticulates, notches, knives, Levallois flakes and blades. These account for 88-00% of the finished tools while bifaces—handaxes and cleavers—constitute only 12-00%. Pebble tools—choppers and chopping tools—are completely absent. The ratio of cleavers to handaxes is 3:1. The handaxes are usually made on flakes and are thin, symmetrical and of oval, cordiform and elongated pointed shapes. Cleavers, all made on flakes, are parallel-sided, convergent or divergent in form and have transverse, oblique and splayed edges and usually parallelogrammatic cross-section. They are very highly symmetrical in outline, are usually thin and display a very high degree of craftsmanship. The Levallois technique is quite dominant, the Levallois index being 12-41. There are numerous tortoise and discoid cores besides massive globular and amorphous cores weighing up to 40 kg. The predominance of non-biface flake tools, high percentage of end scrapers, very low percentage of bifaces, high ratio of cleavers to handaxes, absence of chopper-chopping tools, high Levallois index and very advanced craftsmanship displayed by the tools—all strongly suggest that the Acheulian industry of Bhimbetka belongs to the terminal stage of the Acheulian tradition.

Middle Palaeolithic materials occur in several shelters and the deposit usually varies from 20 to 50 cm, suggesting that it was shorter cultural phase than the Acheulian. At Bhimbetka the Middle Palaeolithic deposits *in situ* out of the preceding local Acheulian. The material remains the same. Handaxes and

cleavers disappear early in this phase, but other tool types persist. There is a slight tendency for tools to get smaller. More noticeable is the phenomenon of many scrapers being made on the flat natural slabs of stone instead of only on flakes as in the preceding phase. The Levallois technique continues to remain dominant.

The Upper Palaeolithic [4.4] phase was even more short-lived though it grew out of the local Middle Palaeolithic. Many of the older tool types persist. But the significant new features are a higher percentage and more typical nature of end scrapers and the appearance of short thin blades, microblades and occasionally burins.

Next to the Acheulian culture the Mesolithic culture is very well-defined. During this period the maximum number of caves was occupied, clearly showing that there was a phenomenal increase in the population. Whether it was due to an amelioration in climate and consequent increase in food resources or new technological innovations and more efficient exploitation of food resources or both, we cannot be sure. Our knowledge of the Mesolithic culture is also richer because in the deposits of this period organic material in the form of animal remains and human burials has survived. It is also possible to correlate a part of the cave paintings (see below) with this phase, and thus know something about contemporary life and environment. We can also discern an evolution in the Mesolithic culture induced by contact between Stone Age cave-dwellers and the settled agricultural communities of the plains.

The habitational deposit of the Mesolithic period varies from 0-20 m to 1-50 m in different caves. In caves with thicker deposit four distinct layers can be distinguished, suggesting that environmental conditions throughout this time were not the same. The Mesolithic people introduced a completely new technology and also a new type of raw material. Their technology consisted essentially of microlithic tools which were made on slender microblades detached from cylindrical cores by pressure technique [16.17.2]. The microliths were made by blunting one or more margins. The types of microliths include blunted-back blades, obliquely truncated blades, points, crescents, triangles, trapezes and transverse arrowheads. These tiny tools were hafted into bone or wooden handles to make knives, arrowheads, spearheads, sickles, etc. Besides, side scrapers, end scrapers, borers, burins, truncated flakes and other flake and core tools are also found. All these tools are made on fine-grained rocks like chert and chalcedony. In the earliest phase of the Mesolithic culture the blades tend to be longer, wider and thicker and the proportion of geometric microliths is smaller. With the passage of time the bladelets tend to be smaller and more symme-

trical, and the cores also display greater mastery of technique. In the earlier stages of this culture quartzite flakes, blades and other tools were also in use on a small scale. It is clear that the Mesolithic technology was introduced from outside among the existing populations and slowly supplanted the older technology. These people also used bone and antler points.

The raw materials of the Mesolithic people—chert and chalcedony—are not available on the Bhimbetka and neighbouring hills but are found as nodules in the veins in Deccan lavas which overlie the Vindhyan sandstones. The nearest source of these materials is near BARKHERA, 7 km to the s.-e. of Bhimbetka. These materials were therefore clearly imported. The Mesolithic people also used querns and rubbers for the preparation of their food. The presence of these objects in the Mesolithic levels clearly shows that they cannot be taken to be one of the criteria of a Neolithic economy. All through the Mesolithic deposit ground pieces of red ochre or haematite are found, showing that they were used for producing pigment used in the making of paintings in the caves (see below).

The people of the period buried their dead within the caves in the living areas. The body was placed either in an extended or in a crouched position, with the head usually to the e., but sometimes also to the w. Stone querns, rubbers, antlers, bone tools and haematite nodules were placed with the dead as grave goods. Usually the skeletons have much disintegrated.

That the Mesolithic people regularly used fire is testified by the presence of ash, charcoal and charred bones and antlers. Animal bones, often broken and charred, belong to the deer, antelope, cattle and wild boar. Pieces of antler cut with sharp instruments are also found.

These people made floors with flat stone slabs. In cave III F-23 a 6 m long and 1 m wide wall made of stone boulders was also found. Perhaps it was intended to partition the cave into compartments.

In the middle levels of the deposits there are copper tools and painted as well as unpainted pottery of the Chalcolithic tradition [4.14.5], suggesting a cultural contact between the Stone Age hunter-gatherers of the caves and the settled agriculturists of the plains. This contact is also seen in the Chalcolithic pottery designs on the cave paintings. On the very top levels we also get plain early historical pottery [14.8.6], iron tools and punch-marked coins [3.1]. It would appear that with greater and more frequent contact with the settled agriculturists of the plains the cave-dwelling hunter-gatherers not only took to metal technology but slowly abandoned the hunting-gathering way of life and started settling in the plains to practise agriculture. In this way the way of life based on stone technology, hunting-

gathering economy and dwelling in caves came to an end.

Though regular occupation in the caves appears to have been given up by the end of the Mesolithic times, probably by the end of the 1st millennium B.C., some human presence and activity continued at the site intermittently all through the historical times. A number of circular structures of stone slabs on hill slopes appear to be miniature Buddhist *stupas*. The presence of inscriptions in Aśokan Brāhmī characters in the caves supports the theory of these structures being *stupas*. The recent discovery of large *stupas* and an Aśokan inscription at Pan Guraria, 20 km to the w. of Bhimbetka, strengthens this hypothesis. Occasionally punch-marked coins have also been found in the caves near the surface of the deposits. There are also later inscriptions in Gupta and shell characters. At the foot of the Bhimbetka hill there are ruins of several temples of the Paramāra period.

Open-air camp sites. Besides the occupations in caves and rock-shelters there are numerous open-air Stone Age camp sites in and around Bhimbetka. Lower Palaeolithic assemblages are found extensively in the forested valleys around Bhimbetka. Right near the Bhimbetka hill there is a large open-air Middle Palaeolithic site on a rocky terrace. Microliths lie littered in large quantities in front of numerous shelters.

But the richest open-air Stone Age site is at BARKHERA, 7 km to the s.-e. of Bhimbetka. Here thousands of Acheulian implements lie scattered on flat ground in a dense teak forest on the s. edge of the highway. On the n. side of the highway agricultural fields formed by clearing the forest are equally rich in Acheulian assemblages. These assemblages are characterized by the predominance of cleavers. Other tools in them are handaxes, side scrapers, end scrapers, knives, denticulates, notches, truncated flakes, Levallois flakes and blades. Though there are numerous beautiful small Levallois and discoid cores there are hardly any large cores and very little of waste flakes and chips. The tools are in an excellent state of preservation and have suffered little or no displacement. The Acheulian industry is very similar to that of the Bhimbetka shelters and represents a highly evolved terminal stage of the Acheulian tradition. It is clear that Barkhera was a large camp site of the final Acheulian hunter-gatherers.

Rich Acheulian camp sites are also known from around the village of KHANDERA, some 10 km e. of the town of Raisen and about 60 km n.-e. of Bhimbetka. Here too the Acheulian tools are found both in the forested tracts and cultivated fields. The assemblages are in very fresh condition and are dominated by cleavers as at Barkhera and Bhimbetka. It is clear that the final Acheulian occupation in the Bhimbetka region

was very extensive and the human population at this time must have been quite dense.

Cave paintings. Bhimbetka is as rich in cave paintings [13] as in the habitation record of the Stone Age man and is indeed better known for the former. Over 500 shelters contain paintings on their walls and ceilings and in hollows formed by the weathering of the rocks. The paintings range from one or two figures to large canvases up to 10 m in length. In shelter III C-50 the entire flat ceiling, some 10 m long and 5 m broad, is filled with paintings. Most of the paintings are in red or white colour but occasionally paintings in green or even yellow colour are also found.

The paintings can be assigned to three cultural and chronological phases: (1) prehistoric, (2) transitional, and (3) historical. The paintings of the first phase are dominated by wild animal life. Among the animals depicted are the cattle, buffalo, boar, tiger, sambar, chital, barasingha, blackbuck, nilgai, elephant and rhinoceros. The animals are depicted sometimes singly but more often in groups. They are seen grazing, standing, moving or running. The bodies are drawn in outline, completely or partially filled with colour or filled with a variety of geometric patterns like horizontal and vertical strokes, wavy lines, herring-bone patterns, lozenges and other intricate geometric patterns. The size of the animals ranges from miniature of a few cm to life-size figures. They are characterized by a proportionate rendering of the body, realism and vitality. Often animals are shown as being hunted with spears, bows and arrows and traps. Some animal figures combine characters of several animals and are part of a composition, suggesting mythological scenes.

Human figures portrayed in this phase are far less elaborate. They are usually shown in a stick-like form and sometimes the body is filled with colour. They are seen engaged in hunting either individually or in groups, collecting vegetable foods, running and moving or engaged in other activities like what appear to be looking after a sick person or mourning the death of a child. Women are also occasionally shown, sometimes in a pregnant condition. There is nothing in these paintings to suggest their authors' knowledge of agriculture or domestication. It is clear that they belong to the hunting-gathering stage of life. The discovery of numerous haematite nodules with tell-tale ground facets clearly shows that they were used to produce the pigment used for making the paintings. These earliest paintings can therefore be assigned to the Mesolithic phase.

The paintings of the transitional phase suggest the impact of the Chalcolithic culture. Men are seen grazing and riding animals, implying knowledge of domestication. The motifs used for filling the body of the animals recall designs on the Chalcolithic pottery

[4.14.5]. Animal figures tend to lose naturalism and begin to be disproportionate.

The paintings of the third phase differ markedly in content and style from those of the earlier two phases. Wild animals are scarce in them. Instead they are dominated by war scenes and processions with men riding on caparisoned horses and elephants, men armed and fighting with spears, bows and arrows and shields and swords; there are occasional hunting scenes, group dances, palm prints, sun and other symbols and geometric patterns. There is a clear decline in realistic portrayal of animal and human figures, which now tend to be disproportionate, dull and uninspired. It is clear that the painting activity was now reduced to the repetition of a tradition from the spontaneous expression of nature and society in earlier times. The earlier among these paintings are associated with Gupta inscriptions and the later ones with inscriptions in shell characters. These paintings clearly belong to the historical period.

Jacobson, J., 1975, in *Proc. American Philosophical Soc.*, 119, pp. 280-97. Misra, V.N., 1978, in *Purātattva*, 8. Misra, V., & Mathpal, Y., 1979, in *Man & Environment*, 3, pp. 27-33. Misra, V.N., Mathpal, Y., & Nagar, M., 1977, *Bhimbetka: Prehistoric Man & his Art in c. India*, Poona. Wakankar, V.S., 1976, in *Prācya Pratibhā*, 3, pp. 7-29.—V.N. MISRA

Bhimkand, Dt Dhenkanal. Series I (Lower Palaeolithic [4.2]) tools.

IAR 1957-8.

Bhimnagar, Dt Bharatpur. PGW [11.14] site.

IAR 1970-1.

Bhimpatal, Dt Ahmadabad. The finds consist of Middle Stone Age (Middle Palaeolithic [4.3]) tools such as scrapers. The site is assignable to the late Harappa period [4.10] comparable with Pds II B and II C of RANGPUR. The Lustrous Red Ware [11.9] is found in a very limited quantity.

IAR 1955-6. AI, 18 & 19, 1962 & 1963, p. 185.

Bhinyapura, Dt Sehore. Ten painted rock-shelters [13].

IAR 1959-60; 1960-1.

Bhishmagnagar, Dt Lohit. A fortress, 10 km sq. a semicircular earthen rampart, two brick-built gates and the ruins of a palace in the centre. It was first noticed by Vetch, 1848, and was excavated by Arunachal Research Dept in 1967-70. The wheel-turned pottery belongs to the 10th-12th centuries. The fort was later on taken over by the Chutiyas in the 13th century and annexed by the Ahoms in the 16th.

Vetch, in *Jour. Asiatic Soc.*, 1848. *Arunachal News*, March, 1972.—Y.A. RAIKAR

Bhishampur, Dt Farrukhabad. PGW [11.14], NBPW [11.16], Black-slipped Ware [11.13] and black-and-red ware.

IAR 1965-6.

Bhita¹, Dt Allahabad, about 22 km up the Yamuna, from Allahabad, 2 km off its right bank, with extensive

mounds partially excavated in 1909-10 (*ASI—AR 1909-10*, p. 40) by J. Marshall. The excavated brick structures belong to five Pds, the last of which has been ascribed to the Gupta age. Below the lowest brick structures there are thick occupational deposits believed to go back to a date much earlier than the Mauryan epoch, though the basis of the dating is not clear. However it is now known that it was one of the sites with the NBPW [11.16] (*AI*, 1, 1946, p. 55), so that its early historical origin is certain. The site seems to represent a township inhabited by a mercantile community. The small finds include sealings [3.2], both mercantile and religious, mostly of Kushan and Gupta dates, tribal and Kushan coins (1st century B.C. to 2nd century A.D.) and terracotta figurines of comparable date. A well-observed re-examination of the site, particularly of the lower strata, may yield valuable material relating to the pre-Mauryan period.

—A. GHOSH

Bhita², Dt Jabalpur. Series II (Middle Palaeolithic [4.3]) tools, microlithic, black-and-red ware and NBPW [11.6].

IAR 1959-60; 1960-1.

Bhitari, Dt Ghazipur, on the bank of the Gangi, 8 km n.-e. of Saidpur (25°18'; 83°12'), a Tahsil headquarters, known for a pillar with an inscription of Skandagupta (455-67) recording his exploits, the erection by him of an image of Viṣṇu and the allotment to the idol of the village on which it stands. With a view to ascertaining the archaeological context of the pillar the Banaras Hindu Univ. under K.K. Sinha excavated (*IAR 1968-9*, p. 38; *1969-70*, p. 41) the undulating ground adjoining the pillar and exposed the 16.38 m sq base of a temple with 1.12 m wide walls with a later extension on the e., following the same alignment as the square base of the temple and indicating their interconnection. The wall has two phases of construction resting on a floor of dressed sandstone blocks. The use of decorated bricks and the sunken faces of the elevation recall those of the Gupta temple at Bhitargaon, Dt Kanpur. Fragmentary bricks with the inscription *śrī-Kumāraguptasya* (Kumāragupta being the father of Skandagupta) are significant. A sandstone panel with Yaśodā receiving the baby Kṛṣṇa from Vasudeva is similar to the one from the temple at Deogarh, Dt Lalitpur, also Gupta in date. Elaborate structural activity is evidenced at the site even before the construction of this structure, which may well represent a temple. The plinth of another temple—a chamber square on plan, with doubly recessed corners in its 1.78 m thick walls, giving it a *tri-ratha* plan—was exposed 300 m n. of the pillar. At a subsequent stage its simple plan was elaborated by the addition of a 6.57 m square pavilion, of which six masonry pillar bases have been found. The small finds include terracotta figurines, shell bangles, etc.

Earlier the NBPW [11.16] had been found here (*IAR 1951-2*, p. 53).

—A. GHOSH

Bhoapur, Dt Muzaffarnagar. Red ware of Śuṅga-Kushan assemblage and medieval ware.

IAR 1962-3.

Bhogpur, Dt Bulandshahr. PGW [11.14], early historical and medieval site.

IAR 1963-4; 1965-6.

Bhojapur¹, Dt Nasik. Painted pottery with microliths [4.14.6].

AI, 9, 1953, p. 68.

Bhojapur², Dt Schore. Painted rock-shelters [13].

IAR 1960-1.

Bhojapur-ka-kot, Dt Ghazipur. Black-and-red ware [11.6.3].

IAR 1963-4.

Bhojapuri, Dt Ahmadnagar. Chalcedony blades, lunates and scrapers were found together with painted pottery of the Jorwe fabric [11.11].

IAR 1953-4.

Bhojasala, Dt Dhar. A small-scale excavation yielded potsherds of the Gupta and Paramāra periods, bricks and brickbats of the Paramāra period and other minor antiquities.

IAR 1972-3.

Bhojavadar, Dt Bhavnagar. Middle Stone Age (Middle Palaeolithic [4.3]) site. Other localities had early historical material. See PHUL TIMBO.

IAR 1971-2.

Bhojnari, Dt Kutch. Historical site. See AJMEL.

IAR 1965-6.

Bhojpur¹, Dt Damoh. Middle Palaeolithic [4.3] site.

AI, 17, 1961, pp. 5-36.

Bhojpur², Dt Dhule. Series II (Middle Palaeolithic [4.3]) site on the river Kopra.

IAR 1958-9.

Bhokar (77°40'; 19°14'), Dt Nanded. Upper Palaeolithic [4.4] site about 40 km e. of Nanded yielding scrapers, burins, blades, borers, points and knives.

Joshi, R. V., & Pappu, R. S., 1979, in *Man & Environment*, 3, p. 86.

Bhokardan, (20°16'; 46°47'), Dt Aurangabad, ancient Bhogavardhana, (*IAR 1958-59*, p. 68), on the trade route from Ujjayinī (UJJAIN) to Pratiṣṭhāna (PAITHAN), some inhabitants of which made donations to the *stūpas* of Bharhut and SANCHI. Excavation by the Nagpur and Marathwada Univs. revealed that it had been a small settlement in Pd Ia, pre-Sātavāhana, with a few punch-marked coins [3.1]. In Pd Ib, Sātavāhana-Kṣatrapa, it attained prosperity, with brick-built houses on pebble foundations and tiled roofs. There were coins of Nahapāna and the Sātavāhanas and the Sātavāhanas black-and-red ware. Roman contacts were mainf in the Red Polished Ware [11.23], Megaron Ware [1.18], amphorae [11.19], bullae [6.4] and rotary quern [6.19]. A remarkable find is an ivory mirror handle with a

heavily ornamented but undraped female figure and two female attendants. Pd II, post-Sātavāhana, was one of decline. It had Kārdamaka coins, a coin of Kumāragupta I and polychrome glass bangles. A large rock-cut Brāhmaṇical cave belongs to this Pd.

There were Middle Palaeolithic [4.3] tools on the surface.

Deo, S.B., & Gupta, R.S., 1974, *Excavations at Bhokardan*, Nagpur-Aurangabad.

Bholadih, Dt Singhbhum. Microliths [4.5].

IAR 1963-4.

Bholni, Dt Saharanpur. OCW [11.5] and Śunga-Kushan and medieval wares.

IAR 1964-5.

Bhombora, Dt Kutch. Historical site. See AJMEL.

IAR 1965-6.

Bhona, Dt Dhule. Chalcolithic habitation site with burial remains [4.14.6].

IAR 1960-1.

Bhondgaon, Dt Dhule. Microliths and sometimes neoliths were found in association with a black-on-red painted pottery and coarse grey ware similar to that from the Chalcolithic [4.14.6] levels of BRAHMAGIRI and BAHAL. The site also contained the remains of burials associated with pots of the black-and-red ware bearing graffiti [20.1]. See KAN VALLEY.

IAR 1957-8.

Bhondwas, Dt Ujjain. Historical site.

IAR 1971-2.

Bhopal, Dt Bhopal. Early and Middle Stone Age (Early and Middle Palaeolithic [4.2, 3] tools were collected from various localities including the area around Vidhyaka Vishram Griha, Raj Bhawan, Tantiya Tope Nagar, Arera Hills and Shyamala Hills. Late Stone Age (Mesolithic [4.5]) implements occurred in the bed of the rivulet Gau-Kho, 37 km w. of Bhopal, while more than half-a-dozen groups of painted rock-shelters [13] were also found. Most of the paintings were on the roof. A few were in white, although red paintings predominate.

IAR 1956-7; 1959-60; 1960-1; 1963-4; 1964-5; 1965-6; 1966-7; 1968-9.

Bhopar, Dt Jabalpur. Microliths [4.5].

IAR 1962-3.

Bhor, Dt Pune. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1969-70.

Bhordapada, Dt Dhule. Chalcolithic [4.14.6] burial site.

IAR 1965-6.

Bhortek, Dt Dhule. Tools of Series II (Middle Palaeolithic [4.3]). Microliths and sometimes neoliths were found in association with the black-on-red painted pottery and the coarse grey ware similar to that from the Chalcolithic [4.14.6] levels at BRAHMAGIRI and BAHAL.

IAR 1962-3.

Bboyar, Dt Chandrapur. Lower Palaeolithic [4.2] site.

IAR 1960-1.

Bhuasoni (22°2'; 86°32'), Dt Mayurbhanj. See KULIANA.

Bhubaneshwar, Dt Puri. A polished stone celt was found in the exposed section at the base of a mound located on the right side of the bridge over the Gangua river on the Bhubaneshwar-Puri road. Earlier microliths had been recovered.

IAR 1963-4; 1969-70.

Bhud, Dt Solan. Lower Palaeolithic [4.2] site in the SIRSA VALLEY.

Mohapatra, G.C., 1966, in *Bull. Deccan Coll. Res. Inst.*, p. 224.

Bhuda-Godh, Dt Kutch. Historical site. See AJMEL.

IAR 1965-6.

Bhudan (30°12'; 75°53'), Dt Sangrur. Pre-Harappa [4.8], late Harappa [4.10] and PGW [11.14] site.

Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 122. Suraj Bhan & Shaffer, J.G., 1978, in *Man & Environment*, 2, p. 67.

Bhudihaadon, Dt Bijapur. Thick coarse grey ware with ribbon flakes of chert [4.14.8].

IAR 1958-9.

Bhukari, Dt Ambala. PGW [11.14] site on an old Yamuna bank.

Suraj Bhan & Shaffer, J.G., 1978, in *Man & Environment*, 2, p. 62.

Bhukhi, Dt Panch Mahals. Mesolithic [4.5] site.

IAR 1972-3.

Bhuma, Dt Muzaffarnagar. Grey ware associated with NBPW [11.16], Black-slipped Ware [11.13] and medieval ware.

IAR 1962-3.

Bhunari, Dt Banda. Polished stone axes and hammer stones [4.6.3].

IAR 1961-2.

Bhura, Dt Muzaffarnagar. Mound on the Katha Nala yielding typical Harappa pottery [11.3], PGW [11.14] and sherds of the red ware of the Śunga-Kushan period.

IAR 1968-9.

Bhusda, Dt Surat. Early, Middle (Lower, Middle [4.2.3]. Palaeolithic) and Late Stone Age (Mesolithic [4.5]) sites.

IAR 1967-8.

Bhutakotada, Dt Surendranagar. Harappa [4.9] site.

IAR 1962-3.

Bhutano-Timbo, Dt Bhavnagar. Early historical site.

IAR 1971-2.

Bhutia, Dt Chittaurgarh. Early and Middle Stone Age (Early and Middle Palaeolithic [4.2, 3]) site in the Wagon valley.

IAR 1962-3.

Bhutra, Dt Hoshangabad. Lower Palaeolithic [4.2] site.

Rep. Geological Surv. Ind., 4.

Bhutsahar, Dt Burdwan. Microliths [4.5].

IAR 1963-4.

Bhuvel (Bhuwal), Dt Ahmadabad. Mesolithic [4.5] site.

IAR 1970-1; 1971-2.

Bhuwana, Dt Udaipur. Microlithic site [4.5] in the Ahar valley.

IAR 1959-60; 1962-3.

Bhuwara, Dt Junagarh. Red Polished Ware [11.23].

IAR 1957-8.

Bhuyar, Dt Bijapur. Chalcolithic [4.14.8] habitation site rich in microlithic blades along with fluted cores, Jorwe Ware [11.11] and grey ware similar to that from BRAHMAGIRI.

IAR 1958-9.

Biawar, Dt Chittaurgarh. Microlithic [4.5] site. See BARA BEDLA.

IAR 1956-7.

Bibipur-Kalan, Dt Ambala. PGW [11.14] site.

IAR 1964-5.

Bichana, Dt Ranchi. A flat copper celt [4.11].

Orissa Museum collection.

Bichauli Tekri, Dt Indore. Microliths [4.5].

IAR 1957-8.

Bichia, **Bichhia**, Dt Allahabad. Late Stone Age (Mesolithic [4.5]) site situated on the old terrace of the Ganga known as Bhagar yielding scrapers, points, parallel-sided and blunted back blades and lunates. No geometric tool was found. On the basis of both raw material and typology, this assemblage can be equated with that of the earliest deposit of LEKHAHIA and MORHANA PAHAR. In the light of the available evidence this habitation site represents seasonal migration and a temporary camp in the newly reclaimed areas in the Ganga valley which, on account of its sandy character, could have supported shrub-like vegetation suitable for small game animals and birds.

IAR 1971-2. Misra, V.D., 1971, Some Aspects of Indian Arch., Allahabad, p. 58.

Bichna, Dt Ranchi. Site yielding potsherds, stone celts, beads, iron arrowheads, copper axe-head, etc.

Roy, S.C., 1915, *Jour. Bihar & Orissa Res. Soc.*, 1, pp. 240-2.

Bichore, Dt Chittaurgarh. The Parsoli nullah near Bichore yielded palaeoliths [4.2] in large numbers. The industry may be regarded as late Acheulian in character.

IAR 1954-5; 1957-8; 1963-4.

Bichpari, Dt Karnal. Late Harappa [4.10] site comparable with MITATHAL II B.

Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 125.

Bichri, Dt Udaipur. Series III (Mesolithic [4.5]) tools.

IAR 1956-7; 1959-60.

Bidarhalli, Dt Dharwar. Lower Palaeolithic [4.2] site.

Progress of Kannada Res. in Bombay Province 1941-6, 1948, p. 3.

Bidarkatti, Dt Dharwar. Megalithic stone circle [17.8].

IAR 1958-9.

Bidarkundi, Dt Bijapur. Early historical site yielding black-and-red ware [11.15.3] and the Russet-coated Painted Ware [11.22].

IAR 1962-3.

Bighatoli, Dt Ranchi. Microliths [4.5].

IAR 1963-4.

Bigod, Dt Bhilwara. Site on the river Banas with Series I (Lower Palaeolithic [4.2]) tools.

IAR 1958-9; 1959-60.

Bihara, Dt Bhilwara. Non-Megalithic black-and-red ware [11.6.2].

IAR 1958-9.

Bihupur, Dt Kanpur. NBPW [11.16], Black-slipped Ware [11.13] and slipped red ware.

IAR 1967-8.

Bijalipur, Dt Ballia. Black-and-red ware [11.6.3] and NBPW [11.16] site.

IAR 1963-4.

Bijalpur, Dt E. Nimar. Tools of Series I and II (Lower and Middle Palaeolithic [4.2, 3]).

IAR 1960-1.

Bijana, Dt Udaipur. Microlithic [4.5] site. See BARA BEDLA.

IAR 1956-7.

Bijatata, Dt Mayurbhanj. Series I and II (Lower and Middle Palaeolithic [4.2.3]) tools.

IAR 1957-8.

Bijaygarh, Dt Mirzapur. Rock-paintings [13]. A quartz scraper and other implements and later antiquities were found.

Ghosh, M., 1932, *Rock-paintings and other Antiquities*, Mem. ASI, 24.

Bijnavemula, Dt Kurnool. Early historical site.

IAR 1964-5.

Bijinivemula, Dt Prakasam. Early historical site.

IAR 1971-2.

Bijliwal, Dt Gurdaspur. Early historical remains. See ACHAL SAHEB.

IAR 1961-2.

Bijori, Dt Narsinghpur. Rock-shelter with paintings [13]. In the vicinity were found backed blades of chert and jasper.

IAR 1960-1.

Bijwa, Dt Alwar. PGW [11.14] site.

IAR 1954-5.

Bikkun (31°3'; 76°37'), Dt Rupnagar. Harappa [4.9] site. See DHIER MAJRA.

IAR 1953-4. AI, 10 & 11, 1954 & 1955, p. 146. Suraj Bhan, 1975, Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide, Kurukshetra, p. 122.

Bikli, Dt Chandrapur. Late Stone Age (Mesolithic [4.5]) site.

IAR 1967-8.

Bilalam, Dt Dharmapuri. Megalithic site with dolmenoid cists and circle stones [4.17.9].

IAR 1967-8.

Bilara, Dt Jodhpur. Microlithic [4.5] tools were found 6-4 km from Bilara on the road to Jodhpur. They were made on chert and quartz on an eroded ferrugineous surface.

IAR 1958-9.

Bilariya, Dt Sitapur. NBPW [11.16] site.

IAR 1971-2.

Bilaspur¹, Dt Gulbarga Chalcolithic [4.14.8] site.

Paddayya, K., 1973, *Investigations into the Neolithic Culture of Shorapur Doab s. India*, Leiden, pp. 9-10.

Bilaspur², Dt Kangra. Terraces of the Sutlej yielded Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1961-2.

Bilaspur³, Dt Saharanpur PGW [11.14] site.

IAR 1965-6.

Bilawali, Dt Dewas. Kayatha Ware [11.7] site. Black-and-red pottery, slipped ware and Vesiculated Ware [11.17] ware were also found resembling those from UJJAIN. Finds of the early historical period included punch-marked coins [3.1] and copper, iron and terracotta objects. The last period belonged to the early medieval times.

IAR 1956-7; 1962-3, Wakankar, V.S., 1976, in *Arch. Congress & Seminar*, 1972, Kurukshetra.

Bilebhavi¹, Dt Bijapur. Chalcolithic habitation [4.14.8] site. See BAGLUR.

IAR 1960-1.

Bilebhavi², Dt Raichur. Megalithic [4.17.8] site also with rock paintings [13].

Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, p. 12.

Bilgava, Dt Burdwan. Microliths [4.5].

IAR 1960-1.

Bilgawan, Dt Sagar. Lower and Middle Palaeolithic [4.2, 3] tools were found in the valley of the Billa, a tributary of the Dhasan.

IAR 1960-1; 1963-4.

Bilgi, Biligi, Dt Bijapur. A nullah emanating from the foothills was found to contain tools of Series II and III (Middle Palaeolithic [4.3] and Mesolithic [4.5]) made respectively of chert and carnelian or jasper. Neolithic [4.6.9]-Chalcolithic [4.14.8] remains were also found.

IAR 1955-6; 1965-6. *Progress Rep. Kannada Res. Inst.*, 1953-7, p. 27.

Biligere, Dt Tumkur. Lower Palaeolithic [4.2] site.

Seshadri, M., 1956, *Stone-using Cultures of Pre- & Protohistoric Mysore*, London, pp. 14-15.

Biligirihalli, Biligirahalli, Dt Kolar. Megalithic stone circles [4.17.8].

IAR 1972-3.

Bilikambe, Dt Nilgiri. Megalithic barrow [4.17.8] yielding potsherds, objects of bronze, crystal, horn, gold, an iron antimony rod [4.8.1] and some glass beads.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Bilkharia, Dt Raisen. The implementiferous gravel underlying the uppermost deposit of the Black Cotton Soil [9.1] at the foot of a sandstone hill about 25 km e. of Bhopal yielded cleavers, discoids choppers, handaxes and cores [4.2].

IAR 1966-7; 1968-9.

Billamarayanagudda, Dt Raichur. Neolithic [4.6.9] site also with rock bruising [13].

Allchin, F.R., 1963, *Neolithic Cattle-keepers of s. India*, Cambridge, p. 161. AR Hyderabad Dept of Arch. 1935-6, pp. 2, 20. Foote, R.B.,

1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, pp. 122-3, *Karnataka Bharati*, 8, 1, p. 11.

Billa Surgam (15°25'; 78°15'), Dt Kurnool, approximately 4.5 km s.-e. of Betamcherla. Newbold, 1884, declared the caves as fossiliferous for the first time. In 1884 Foote and his son, and in 1927 Cammiade brought to light other caves, such as YAGANTI near Banganapalli and YERRAZARI-GABBI, SANYASULA-GAVI and KRISHNAMAKONA-GAVI, the last three near Betamcherla and Panyam.

In 1884 Foote, 1916, and his son H.P. Foote conducted excavations at Billa Surgam and YERRAZARI-GABBI and found the cave sediment at Billa Surgam to be composed of clays, stalagmites, stalactites and limestone blocks forming breccia. The maximum thickness of the sediment appeared to be more than 10 m and even then the cave floor was not reached. The material in it was associated with the Late Pleistocene fauna, falling under the orders of Primates, Carnivora, Insectivora, Chiroptera, Rodenta, Ungwata, Edentata, Reptilia and Amphibia. It was classified in detail by Lydekker, 1886.

Explorations of all the important caves in the limestone formations near PANYAM in Kurnool District mentioned by Cammiade, 1927, was made in 1957 by the writer and R.V. Joshi, both of the ASI (IAR 1957-8, p. 9), but they did not find in them any Stone Age artefacts or fossils in their surface explorations. A trial excavation at the KRISHNAMAKONA-GAVI also did not throw up any culture debris. The Galeru valley nearby between Atmakur and Nandyal however showed a Lower Palaeolithic [4.2] culture station.

In recent years MUCCHATLA-CHINTAMANU-GAVI (15°25'; 78°8'), 5 km s.-w. of Betamcherla, was excavated by Murthy, 1970. The results revealed from the top to the bottom, a Neolithic [4.6.8] perforated pot in layer 1, with no antecedent overlap with the preceding levels which were pre-Neolithic; in the bottommost layer, 3, there was a concentration of cultural and faunal material, suggesting a coeval commencement of both human activity and sedimentation. The lithic industry revealed the blade element, comparable with the blade and burin facies found elsewhere in this Dt as well as Chittoor Dt around Renigunta. By their massive size and lack of delicate retouch, they are also distinctly different from typical Mesolithic [4.5] assemblages. The industry falls short of regular tool types like backed blade varieties, scrapers and burins as noted in the adjacent region and might be considered incipient in character. While bone artefacts were found, the absence of occupation floors, charcoal and ashes and accumulation of flood refuse indicates that the cave was probably no living habitational site. In this respect it is similar to most of the sites in Nallamalai and Errmalai, where spots

adjacent to the caves yield sporadic artefacts of Upper Palaeolithic [4.4] and Mesolithic tools (Isaac, 1960). This might suggest that the pattern of living was perhaps nomadic and the sites were of a transit nature. Nevertheless the association with Late Pleistocene fauna gives it a firm chronological horizon for this Upper Palaeolithic facies. The bone tools made on the shafts of long bones after splitting them obliquely include scrapers, perforators, chisels, scoops, shouldered points, barbs and spatulates. The faunal material includes the tiger, horse, bull, buffalo, antelope, gazelle and rhinoceros, thus indicating a hilly and plateau country with scrub-to-tree jungle and grassy plains surrounded by swampy forests, and their disappearance might indicate a palaeo-ecological change in the Holocene due to increased human interference. On general terms the climate during Late Pleistocene [9.7.2] times all around this site would have been relatively humid.

Cammiade, L.A., 1927, in *Man in India*, 7, 1, pp. 1-11. Foote, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras. Isaac, N., 1960, *Stone Age Culture of Kurnool*, Poona. Lydekkar, R., 1886, in *Palaeontology India*, Series 10, 2, pp. 23-58. Murthy, M.L.K., 1970, in *Indian Antiquary*, 1-4, pp. 106-28. Newbold, T.J., 1884, in *Jour. Asiatic Soc. Bengal*, 13, 2, pp. 10-15.—K.V. SOUNDARA RAJAN **Billikal Hill**, Dt Nilgiri. Megalithic cairns [4.17.8] yielding potsherds, bronzes, iron implements, gold beads and ear-rings.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Biloni. See KHIR KHIRI.

Bilsar, Bilsad, Bilsand, (27°33'; 79°16'), Dt Etah. Excavation was undertaken to ascertain whether the temple of Mahāsena mentioned in the duplicate inscription of the time of the Gupta king Kumāragupta engraved on the two round pillars at Bilsar was really situated to the w. of the *torana*. Excavation however showed no trace of the temple. Brick ruins of the Kushan period were brought to light. Cunningham had identified the site with Pi-lo-shan-na mentioned by Hiuen Tsang as containing two Buddhist monasteries, five Brāhmapical temples, another old monastery and an Aśokan *stūpa*.

ASI—AR 1922-3; 1923-4, ASI—AR, 11, 1880, p. 19.

Bilwada, Dt Bharuch. Middle Palaeolithic [4.3] and Mesolithic [4.5] site.

IAR 1968-9.

Bina, Dt Lucknow. NBPW [11.16] site.

IAR 1965-6.

Bina valley, Dt Sagar. Tools were found *in situ* in the gravel and some were collected from the dry river-bed. They consisted of cordiform bifaces, side and end-scrapers on flakes, points, discoid side-scrapers and discs.

IAR 1960-1.

Binanagari (23°43'; 70°22'), Dt Jamnagar. Transitional Harappa phase corresponding to RANGPUR II C.

AI, 18 & 19, 1962 & 1963, p. 205.

Binda, Dt Ranchi. Prehistoric site yielding chisel of schistose stone, polished but broken celt of gneiss, broad flat-bladed axe-head, large elongated celt of schist, a small triangular polished celt of quartzite and a small hatchet of quartz [4.6.4].

Roy, S.C., 1916, in *Jour. Bihar & Orissa Res. Soc.* 2, p. 68.

Bindual, Dt Fatehpur. NBPW [11.16].

IAR 1958-9.

Binjor, Dt Ganganagar. Harappa [4.9] objects and microliths (non-Harappa type) from Binjor-1; PGW [11.14], coarse grey and red wares and Rang Mahal Ware [11.24], perforated and impressed pottery, faience [16.6] and shell bangles from Binjor-2; microliths, Harappa objects from Binjor-3; and PGW [11.14], Rang Mahal ware, faience and shell bangles, beads and terracotta animal figurine from Binjore-4. See SARASVATI VALLEY.

Unpublished.

Binta, Dt Bastar. Middle Palaeolithic [4.3] site in the Indravati river valley.

Madhya Pradesh Sandesh, 13 June, 1970, p. 10.

Biradavada, Dt Nellore. Lower [4.2] and Middle Palaeolithic [4.3] site.

IAR 1968-9.

Birakheri, Dt Ujjain. Early historical site.

IAR 1971-2.

Biramangala, Dt Kolar. Neolithic [4.6.9] site.

Foote, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 66.

Biramdih, Dt Purulia. Microliths [4.5].

IAR 1963-4.

Bir Bada Ban, Dt Jind. Pre-Harappa [4.8], Harappa [4.9] and early historical site.

IAR 1966-7.

Birbhanpur (23°29'; 87°19'), Dt Burdwan, a small village on the left bank of the Damodar, 2 km from Durgapur, the nearest railway station. Clusters of microliths [4.5] occur in this region in an overall area of about 2½ sq km. Since a major part of the microlithic site falls within the revenue jurisdiction of Birbhanpur it has been named after it.

In the stretch between Birbhanpur and Durgapur two terraces of the river are observed; of these the younger comprises, from top downwards, loam, clay and sand, overlying the sandstone bed-rock. No microliths or any other artefacts were recovered from it. The older terrace yields the microliths. On it two trenches were laid out by Lal, 1958, one, called BBP-1, at the lower end and the other, BBP-2, higher up. Though the strata in these two trenches vary slightly in details, in essence they present almost the same story. In BBP-1, overlying the bed-rock is mottled silty sand representing a weathering of the former *in situ*. The next higher deposit comprises lateritic gravel and stone fragments in a consolidated silty matrix. Over it is a 20 to 30 cm thick layer of earth

mixed with coarse granules mainly of quartz and haematite, which yields the microliths. Sealing it is a deposit of sandy earth, 65 to 70 cm in thickness.

In BBP-2 the bed-rock was not reached, but observations in exposures near by showed that it would be the same sandstone as encountered in BBP-1. The lowest excavated layer is that of mottled silty sand formed due to the weathering of the bed-rock. On the undulating surface of this deposit lived the microlithic man, the average thickness of the implementiferous layer, comprising silty sand mixed with lateritic pellets, being about 30 cm. Succeeding it are respectively a thin deposit of granular sand with lateritic pellets and a thicker deposit of sandy earth.

Since the excavation was essentially vertical no plans of dwellings were obtained, but the presence in BBP-2 of about 10 holes, varying in diameter and depth respectively from 10 to 20 cm and 12 to 25 cm and forming a roughly circular (though incomplete) plan, suggests the probable existence of some kind of a hut or wind-break. Within this complex there also lay a stone with a ridge and pitted depression, loosely associated with microliths. Although nothing can be said with certainty, it may well have been an anvil. A similar object was found in BBP-1 as well.

The microlithic industry is essentially non-geometric and unassociated with pottery. Out of over 400 finished tools recovered from the site there are only one trapeze and a doubtful triangle, and these too are from surface clusters and not from excavation. Likewise, no pottery was recovered from the trenches in association with the microliths.

The raw material of the tools includes quartz, rock crystal, chert, chalcedony, quartzite, basalt and fossil wood, the last being of special interest because of its rare use. The cores are either ordinary, from which flakes have been struck freely, or have a prepared platform to produce Levallois-like flakes [16.17.1], or are of cylindrical or conical types from which parallel-sided blades have been detached. A statistical study reveals that the core: waste flake: finished tool ratio is roughly 7 : 88 : 5, which shows that every core did not necessarily produce a tool, and that about a dozen flakes had to be 'wasted' before a finished tool was obtained.

The finished tools include blades, lunates, points, borers, burins and scrapers, accounting respectively for 37.5, 14.8, 21.2, 6.6, 4.2 and 15.3% of the total. The blades, made either on parallel-sided or on leaf-shaped flakes, are either partly or wholly blunted on one side, or sometimes have no such blunting. The lunates are mostly elongated but sometimes stumpy. It is the arc that is usually blunted but a few examples with blunted chord are also encountered. The points are symmetrical as well as asymmetrical. The retouch is along one edge

or both edges either wholly or partly. Specially noteworthy are points with a notch or tang at the base. The borers are either double-shouldered, i.e. with a medial working point, or single-shouldered. Of the burins too there are quite a few varieties: The scrapers include round or discoid scrapers, side scrapers, end scrapers and concave or notched scrapers.

As the microlithic industry is non-geometric and unassociated with pottery, it would be earlier than those in which the geometric forms and pottery begin to appear. Accordingly, in the context of the various developmental stages of the microlithic industry in the country [4.5] and of the ^{14}C dates available for some of these stages, the Birbhanpur stage is unlikely to be later than the 5th millennium B.C. Such a dating is supported by the geological context of the industry. Analysis of the deposit on which the microlithic man lived has shown that it was formed under hot and humid conditions and experts are inclined to assign it to the last pluvial phase of the Pleistocene [9.7.2]. The deposit of sandy earth overlying the microlithic industry was, analysis has shown, laid down under semi-arid conditions which followed the pluviation. Thus the microlithic industry of Birbhanpur may well belong to the early part of the Holocene [9.7.4].

Lal, B.B., 1958, in *AI*, 14, pp. 4-48.—B.B. LAL

Birgoda, Dt Ujjain. Early historical site.

IAR 1971-2.

Birgoda-Randir, Dt Ujjain. Early historical site.

IAR 1971-2.

Birhula-Khera, Dt Jabalpur. Tools of Series II (Middle Palaeolithic [4.3]).

IAR 1959-60.

Birkhabbi, Dt Bijapur. Lower and Middle Palaeolithic [4.2, 3] site.

IAR 1963-4. Pappu, R.S., 1974, *Pleistocene Studies in the Upper Krishna Basin*, Pune, p. 33.

Birpur¹, Birupur, Dt Bulandshahr. PGW [11.14] and plain grey ware.

IAR 1959-60; 1962-3.

Birpur², Dt Ghazipur. Extensive mound yielding NBPW [11.16].

IAR 1971-2.

Birsinghpur, Dt Jabalpur. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1964-5.

Bir Singhwala Chak (29°25'; 74°57'), Dt Hissar. Rang Mahal site.

IAR 1967-8.

Birta, Dt Ranchi. Microliths [4.5].

IAR 1965-6.

Bisai, Dt Mayurbhanj. Tools of Series II (Middle Palaeolithic [4.3]) were collected. They included points, scrapers, borers, burins, blades, cores and flakes. Microliths [4.5] were also found.

IAR 1958-9.

Bisauli (28°18'; 78°56'), Dt Budaun, a Tahsil town, on the s.-e. outskirts of which a farmer had struck upon a hoard of five copper objects [4.11] comprising three anthropomorphic figures and one each of harpoon and flat celt in 1936-7. One of the anthropomorphic figures is now housed in the Municipal Museum, Allahabad, and the remaining objects in the Bharat Kala Bhavan, Varanasi. With a view to seeing if the copper objects could be connected with any other cultural remains, B.B. Lal of the ASI laid out two trenches at the findspot of the Copper Hoard pointed out by the farmer.

The trenches were dug up to a depth of 90 cm. Trench A yielded some pottery which came from within the top depth of 30 cm. The pottery in Trench B came from the top depth of 75 cm. No stratification in the deposits could be identified. The pottery, however, could be divided into two classes: (i) well-fired, red-slipped, painted red ware, and (ii) ill-fired, thick, ochre-washed ware, mostly tiny bits with worn-out edges, without suggesting any clear shapes. Of the two the latter looked older. No copper object was found. However the excavator hazarded the guess that it was the thick, ill-fired pottery alone that could claim contemporaneity with the copper objects found earlier at this spot. The excavator felt that the pottery from HASTINAPURA I, RAJPUR PARASU and BISAULI fell in a single class, christened as the OCW [4.12] and believed to be the ceramic component of the Copper Hoard culture.

Lal, B.B., 1951, in *AI*, 7, pp. 37-8.—Y.D. SHARMA

Bishalbury, Dt Sundargarh. Series I (Lower Palaeolithic [4.2]) tools.

IAR 1957-8.

Bishambharpur-Sani, Dt Ghazipur. Microlithic [4.5] site.

IAR 1962-3.

Bishanpur, Dt Saharanpur. Grey ware site of the early historical period.

IAR 1965-6.

Bisla, Dt Hissar. Early historical site.

Silak Ram, 1972, Unpublished thesis, Kurukshetra Univ.

Bisnal, Dt Bijapur. Ash mound [4.3] and Chalcolithic [4.14.8] site.

Progress Rep. Kannada Res. Inst., 1941-6, pl. 6. Sundara, A., 1971, in *Prof. Nilakanta Sastri Felicitation Vol.*, Madras.

Bisrakh (28°34', 77°26'), Dt Meerut. PGW [11.14] site.

AI, 10 & 11, 1954 & 1955, p. 139.

Bisru, Dt Gurgaon. PGW [11.14] and early historical site.

Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.

Bistupur, Dt Burdwan. Microliths [4.5].

IAR 1963-4.

Bisudih, Dt Dhanbad. Copper object, probably a flat celt, reported in 1880 [4.11].

Patna Museum collection.

Bitergaon, Dt Yavatmal. Middle Stone Age (Middle Palaeolithic [4.3]) implements.

IAR 1964-5.

Bithur, Dt Kanpur. Copper Hoard [4.11] objects and NBPW [11.6].

Indian Antiquary, 34, 1905, p. 232. *IAR* 1955-6; 1965-6.

Bodamuthanur, Dt Mysore. Megalithic cist burials [4.17.8].

IAR 1961-2.

Bodha, Dt Ambala. Late Harappa [4.10] site comparable with MITATHAL II B.

Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 123. Yadav, K.C., ed., 1978, *Haryana Studies in History & Culture*, Kurukshetra, p. 135.

Bodh-Gaya, Buddha-Gaya (24°42'; 85°0'), Dt Gaya, called Sambodhi in an inscription of Asoka and later on known as Mahā-bodhi, as Buddha attained his *bodhi*-hood here under a *pīpal* tree off the bank of the Lilajana (ancient Nairāṇjanā). Asoka erected a *vajrasana*—a polished sandstone throne—to represent Buddha's seat. With the tree and the throne as the nucleus a temple sprang up here and by the time of Hiuen Tsang (7th century) the temple had assumed its present proportions. Thereafter there were many restorations and an extensive overhauling was done in 1880-1. Clearance of the area by Cunningham and others have revealed numerous monuments, mostly votive *stūpas* and to a lesser extent sanctuaries and monasteries, the last mostly hidden below the high ground on which stand modern constructions. The architectural features of the temple and other monuments need not detain us here.

The NBPW [11.16] has been found here (*IAR* 1955-6, p. 71). In the 50s a Japanese team led by G.M. Nagao of Kyoto Univ. made a small-scale excavation here; while the results are not available, nothing of outstanding value was found.

Cunningham, A., 1892, *Mahabodhi or the Great Buddhist Temple at Buddha-Gaya*, London, Mitra, D., 1971, *Buddhist Monuments*, Calcutta, pp. 60-6.—A. GHOSH

Bodia, Dt Rohtak. Rang Mahal [11.24] site.

Jour. Haryana Studies, 3, 1, p. 2.

Bodigutta, Dt Chittoor. Middle Stone (Middle Palaeolithic [4.3]) tools and dolmenoid cists [4.17.7].

IAR 1963-4.

Bodinayakanur, Dt Madura. Megalithic site with large earthen ware vessels and iron swords [4.17.9].

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Bodiparai Forest, Dt Dharmapuri. Megalithic site with dolmens [4.17.9].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Bodiyo¹ (21°49'; 71°06'), Dt Amreli. Late Harappa [4.10] and transitional Harappa phase corresponding to RANGPUR II B and II C.

AI 18 & 19, 1962 & 1963, p. 205.

Bodiyo², Dt Rajkot. Harappa [4.9] site. See DUMIANA.

IAR 1958-9.

Bodupatla, Dt Medak. Microliths [4.5].

IAR 1959-60.

Boganapalli, Dt Salem. Neolithic celts and burnished grey ware [4.6.10] and Megalithic black-and-red ware [11.15.3].

IAR 1964-5

Bogasamudram, Dt Anantapur. Late Stone Age (Mesolithic [4.5]) and Neolithic [4.6.8] site.

Footo, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras. IAR 1965-6.

Bogganapura, Dt Mysore. Russet-coated Painted Ware [11.22] and cairn circles [4.17.8].

IAR 1962-3.

Boggaram, Dt Krishna. Site with dolmens [4.17.7].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Boggeru valley, Dt Nellore. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3]) tools were found at Akilivalasa, Allampadu, Chilakapadu, Dachur, Ellakaru, Gonupalli, Gundavolu, Khadeupur, Kummaragunta, Marripadu, Mittatmakur, Nandipadu and Racharlapadu and Nidigallu.

IAR 1965-6.

Bokaro, Dt Hazaribagh. Handaxe [4.2] of green micaceous quartzite was picked up in 1865.

Brown, C.J., 1917, *Catalogue of Prehistoric Antiquities in Indian Museum, Calcutta*, Simla, p. 67. Logan, A.C., 1906, *Old Chipped Stones of India*, Calcutta, pp. 30-3.

Bokhalidhar (Lakhanka), Dt Bhavnagar. Harappa [4.9] site.

IAR 1971-2.

Bokhara, Dt Nagpur. Late Stone Age (Mesolithic [4.5]) site.

IAR 1968-9.

Bolangir, Dt Bolangir. Microliths [4.5].

IAR 1963-4.

Bolason, Dt N. Kachar Hills. About 400 stones were found, pear-shaped and set up slanting with the 'stalk' end in the ground. These stones are associated with pairs of tanks, which are spoken of by the local Kukis as dancing places; the erection of the stones is ascribed locally to Mikirs. In the same area shouldered celts [4.6.6] are of frequent occurrence.

Hutton, J.H., 1929, on *Antiquity*, 3.

Bolibetta, Dt Nilgiri. Megalithic [4.17.8] site with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Bollapalle, Dt Krishna. Sites with dolmens [4.17.7].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Bollichi, Dt Coimbatore. Cairn circles [4.17.9].

IAR 1957-8.

Bomarayankovil, Dt Nilgiri. Megalithic [4.17.9] site.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras, p. 224.

Bommadahalli, Dt Kolar. Megalithic [4.17.8] site with cairn circles and cists.

Information from C. Krishnamurthy through A. Sundara.

Bommadi, Dt Dharmapuri. Megalithic site with dolmens [4.17.9].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Bommajikonam, Dt Chingleput. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAR 1966-7.

Bommanapalli, Dt Dharmapuri. Megalithic site with dolmens [4.17.9].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Bonaigarh, Dt Sundargarh. Lower Palaeolithic [4.2] site.

Mohapatra, G.C., 1962, *Stone Age Cultures of Orissa*, Poona, p. 39.

Bonaikala, Dt Mayurbhanj. A large number of Series II (Middle Palaeolithic [4.3]) tools and microliths, including parallel-sided blades and lunates, mostly in chert and flint, cores and waste flakes, were found. An ovate and a neolithic [4.6.7] tool were also picked up.

IAR 1957-8; 1958-9.

Bondla, Dt Purulia. Microliths [4.5].

IAR 1962-3.

Bonkati, Dt Burdwan. Palaeolithic site on the s. flank of the Ajay yielding chopper-chopping tools [4.2] and typical handaxes. Besides, some artefacts mainly on chert and flinty material, belonging to the Middle Stone (Middle Palaeolithic [4.3]) Age were also found.

IAR 1963-4; 1966-7.

Boodur (Budur), Dt Chingleput. Lower Palaeolithic [4.2] site on the river Narnavaram.

Footo, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 172.

Bopapur, Dt Chandrapur. Late Stone Age (Mesolithic [4.5]) site.

IAR 1967-8.

Bopataihkonda, Dt Nellore. Lower [4.2] and Middle Palaeolithic [4.3] site.

IAR 1968-9.

Borala, Dt Dhule. Chalcolithic [4.14.6] burial remains.

IAR 1960-1.

Borda, Dt Dhule. Palaeolithic [4.2-4] tools and Chalcolithic remains [4.14.6].

IAR 1958-9.

Borda Pada, Dt Dhule. Chalcolithic [4.14.6] site.

IAR 1965-6.

Borgaon, Dt Sangli. Tools of the Middle and Late Stone (Middle Palaeolithic [4.3] and Mesolithic [4.5]) Ages.

IAR 1962-3.

Borgi, Dt Bijapur. Thick coarse grey ware with ribbon flakes of chert.

IAR 1958-9.

Boricha, Dt Junagadh. Red Polished Ware [11.23] site.

IAR 1954-5.

Borinagaatha, Dt Surat. Early, Middle and Late Stone Age (Lower, Middle Palaeolithic [4.2, 3] and Mesolithic [4.5] sites.

IAR 1967-8.

Borivli. See K(H)ANDIVLI.

Borkhadi, Dt Surat. Mesolithic [4.5] site near Onta.

IAR 1968-9.

Borkhal, Dt Surat. Early, Middle and Late Stone Age (Lower, Middle Palaeolithic [4.2, 3] and Mesolithic [4.5] sites.

IAR 1967-8.

Borkheda-khurd, Dt E. Nimar. Microliths [4.5].

IAR 1959-60.

Borkheri. See SHIVNA VALLEY.

Borli-no-Ghod, Dt Banas-Kantha. Painted red and medieval glazed ware

IAR 1964-5.

Bortipada, Dt Dhule. Late Stone Age (Mesolithic [4.5]) and Chalcolithic [4.14.6] burial site.

IAR 1965-6.

Bothli, Dt Chandrapur. Palaeolithic [4.2.4] site. (Same as following?)

IAR 1960-1

Bothli Madia, Dt Chandrapur. Late Stone (Mesolithic [4.5]) site. [Same as preceding?]

IAR 1969-70.

Brah, Dt Srinagar. Megalithic [4.17.1] site with menhirs and a gritty red ware. See BURZAHOM.

IAR 1969-70.

Brahmagiri, Dt Chitradurga, close to Siddapur, each with two Minor Rock-edicts of Aśoka discovered in 1891 and edited and published in 1892 by B.L. Rice, which, besides indicating the s.most extent by the Mauryan empire, indicate that the locality was known as Isila, the headquarters of the *mahāmātras* of Suvarnagiri. In 1940 M.H. Krishna (*AR Mysore Arch. Dept for 1940*, p. 63), intensively explored the area for the location of Isila and discovered a habitation site on the n. side of the adjacent bouldery granite hill with medieval stone temples, remains of an apsidal brick structure, pottery, beads of terracotta, shell, semiprecious stones and metal, terracotta figurines, numerous megaliths [4.17.8], neoliths [4.6.9], microliths [4.14.8], etc. He also excavated 16 trenches in different parts of the site and recognized five cultural strata: Microlithic; Neolithic; Iron Age; Mauryan; and Cālukya-Hoysala. The Microlithic culture was designated by him as 'Roppa culture', the trench wherein it was identified being located within the limits of the village Roppa.

Later on R.E.M. Wheeler, finding in Krishna's collections the Rouletted Ware [11.21] which he had dated in his excavation at ARIKAMEDU and encouraged by the presence of a habitation site and megaliths at Brahmagiri, excavated the site in 1947 on behalf of the ASI and the Mysore Dept of Arch. (Wheeler in *AI*, 4, 1947-8, pp. 180-311). At the habitation site he established a sequence of three cultures: Pd I, the Polished Stone Axe culture (now designated as Neolithic or Neolithic-

Chalcolithic); Pd II, the Megalithic culture; and Pd III, the Āndhra culture (now regarded as one of the early historical cultures [4.18.10]).

Seshadri, 1956, re-explored the site and collected flake tools of jasper, chert, etc., such as scrapers, and assigned them to Pre-I A phase of Wheeler. In 1965 the writer collected two copper objects from the sieved debris and black-painted red ware sherds of the late Jorwe fabric [11.11] from the surface; in 1978 he found similar painted sherds from the overlapping layers of Pd I B and the Megalithic, remnants of scoriaceous ashy slag at the corner of one of Wheeler's trenches and noticed a large-size engraved outline of an elephant on a huge boulder near the Akkatangiyara temple of c. 11th-12th century.

In Pd I, the Polished Stone Axe culture, houses were of a perishable nature now indicated by post-holes connected by low walls of granite blocks. Pieces of saddle querns [6.19] for grinding, i.e. shallow troughs of granite undressed on the outside, formed part of domestic articles.

The most distinct feature of the culture is the abundance of polished stone axes of dolerite. The axes are triangular in form usually with pointed butt end either lenticular or flattened in section. Parallel-sided blades and microliths such as crescents, beaked graters, backed blades, blades with crested ridge, but strangely enough without fluted cores, made on jasper, agate, carnelian, flint, common opal and rock crystal are considerably large in number. The occurrence of copper/bronze objects such as a chisel and rod of copper as well as a bronze rod from Pd I B indicates an extremely limited use of the metal. The main types of pottery vessels, mostly handmade, generally of coarse grey fabric and in its varying shades, burnished or unburnished, are: the simple globular vase, sometimes with a flaring rim and with a long spout on the shoulder; deep or shallow bowl; bowl with a spout; channel-spouted bowl; and dish-on-stand. It is particularly noteworthy that micaceous black-painted pottery similar to those of the Lower Neolithic [11.1.5] of PIKLIHAL, is found only in Pd I A. And in a pit near the excavated cist circle VI (see below), later in construction than the pit itself, was found a black-painted red jar apparently of Jorwe fabric, along with the Megalithic Black-and-red Ware [11.15], obviously belonging to the overlap phase of Pds I B and II, the latter Megalithic. Besides the painted decoration on pottery some have simple incised designs including the herring-bone pattern.

A finger ring of bronze from a late phase of Pd I B and beads of magnesite, agate and shell, indicate the ornaments of the people. An unbaked clay figurine of an animal, probably a sheep, occurs in the early stratum of Pd I B.

Two kinds of burial practices have been encountered: infant urn burial and adult inhumation burial. In the former type the body of the infant was folded up and interred into the urn. In the latter the dead were placed in a pit in extended way, the head being towards the e., with burial furniture including a spouted vessel.

In Pd II, Megalithic, domestic buildings appear to have been of the same kind as those of the preceding Pd. Polished stone axes and microliths occasionally occur as survivals. What is more distinctive of this culture is the use of iron of offensive and agricultural use, such as a sickle, knife and wedge, an object later identified as coultter, sword, spear and arrowhead. The pottery [11.15.3], entirely different from that of the preceding culture, is of mainly three fabrics: highly polished Black-and-red Ware; all-black ware; and bright as well as coarse dull-red ware. Typical are: the hemispherical deep bowl, shallow dish, tulip-shaped bowl, funnel-shaped lid, ringed lid, connoid and dish-on-stand in all-black ware and Black-and-red Ware; vase and shallow dish in bright-red ware, and lid with flanged waist and three-legged pot in coarse red ware. Not all the types of the habitation site are found in the excavated adjacent megalithic burials. Graffiti [20.1] are more frequent on the pottery from the burials than from the habitation site. Of ornaments a bangle of shell and beads of shell, terracotta, magnesite, jasper and steatite have been found.

The peculiar feature of the culture is the disposal of the dead in a specially constructed stone cist or excavated pit, each enclosed by a circle of boulders on the surface or rarely two concentric circles measuring from 4.8 to 6.3 m in diameter. Of the ten excavated megaliths six are cist circles and four pit circles, respectively numbered I, IV, V, VI, VIII and X, and II, III, VII and IX. The roughly dressed orthostats of the cists measure generally 1.5 to 2.1 m in length 10 to 20 cm in thickness and 1.8 m in height, set mostly in a contra-clockwise way; the floor also is covered with a similar slab. The top of the cist carries an enormous slab (not always available) about 30 cm thick, much larger than the external area of the cist. In the e. orthostat is invariably a port-hole, about 45 to 60 cm in diameter, which is approached externally by a short passage formed by either two orthostats or dry walling. The port-hole as well as the entrance to the passage were closed, obviously after the burial ceremonies, with a thin slab supported externally by a mixture of lime and earth. The whole cist is surrounded by a roughly circular dry-stone walling curling towards the capstone. Around a few cists there are small ancillary shallow cists.

Within the cist were placed funeral pots and other objects such as iron implements, beads and whorls kept on the floor slab. The pots vary in number, for example,

from six in Megalith V to 62 in Megalith X. On these was spread a thin layer of sand about 15 cm thick. The post-excarate human skeletal remains were placed on this layer, in some cases of more than one person, along with a few more pots. Thereafter the cist was filled up with earth. Besides these pots and objects the occurrence of over 40 tiny white beads of magnesite or dolomite in Megalith IV as also in Megalith VII and the absence of iron objects in Megalith V are noteworthy.

The pit circles are about 6 m to 18.5 m in diameter. The pits are either circular or oval on plan, about 2.4 to 3.6 m in diameter. The longer axis of the oval pits is e. to w. The periphery of the pits is approached by a short shallow ramp on the cist which is closed by a non-functional door slab or lime packing. A striking feature is that on the floor of the pit are found four stone slabs demarcating an oblong space 1.2 m by 90 cm, probably supporting the wooden posts of a bier, as suggested by the excavator. Pots and iron objects were placed on the floor, which was overlain by a layer of earth; over this were kept post-excarate human skeletal remains.

In Megalith VII pots have been seen placed along the edge of the pit all round; in another no bones exist. In Megalith IX, 33 gold and two carnelian beads, four copper bangles and a conch shell have been found. The deposits were finally filled with alluvial clay. The excavator suggests that the pit circles 'might have been specialized tombs for a particular and restricted social grade or that were macerating pits in which human bodies were exposed on a bier.'

Pd III, the so-called Āndhra culture, is characterized by a far more sophisticated pottery made on the fast wheel, with white-painted geometrical designs under russet colour [Russet-coated Painted Ware, 11-22]. The most distinct types are the shallow dish with an internally beaked edge and straight-sided bowl. The former may have occasionally concentric rouletted rings. Coarse dull-red cups are very common, besides red vases with collared rim, deep basins with heavy rim, etc. Bangles of shell, clay, bone, glass, bronze and gold and beads of magnesite, shell agate, jasper steatite, carnelian, glass and terracotta have been found in large numbers, the frequent use of glass for ornaments being noteworthy. The fragment of a terracotta round medallion with a row of elephants at the edge testifies to the popular art of the period. Although no remains of brick structures have been found in the excavation, the apsidal brick structure mentioned above probably belongs to a late phase of this culture.

The human skeletal remains from the burial of Pd I B and megaliths indicate respectively Austroloid features and an autochthonous Australoid type, as also a more or less medium-statured, mesocephalic, medium-vaulted, flat-nosed type with a robust constitution and powerful

upper and lower jaws, probably of the Scytho-Iranian stock (Sarkar, 1960).

Considering the datable evidence of pottery with rouletted design, occurrence of Roman denarii of Augustus (minted c. 28 B.C.-A.D. 11) and of Tiberius (minted c. A.D. 27-37) found along with pottery similar to that of Pd III of Brahmagiri at the neighbouring site of CHANDRAVALLI and the historical context immediately following the decline of the Mauryan power and the overlap of the cultures, Wheeler dated the three cultures respectively from the early 1st millennium to the beginning of the 2nd century B.C.; 2nd century B.C. to the middle of the 1st century A.D.; and the middle of the 1st century to the 3rd century A.D. He also regarded the Aśokan edicts of Brahmagiri as having been addressed to the people of the last phase of Pd I. But a revision of the dates in the light of subsequent excavations in this region and elsewhere and the ^{14}C determinations would suggest much earlier dates for the Neolithic and Megalithic cultures and the edicts as having been meant for the edification of the Megalithic people of Pd II.

Sarkar, S.S., 1960, in *Bull. Dept Anthropology*, 9, 1, pp. 5-25.
Sashadri, 1959, *Stone-using Cultures of Pre- & Proto-historic Mysore*, London.—A. SUNDARA

Brahmangaon (22°5'; 86°38'), Dt Mayurbhanj. See KULIANA.

Brahmangaon-bhand, Dt Ahmadnagar. Microliths of the Chalcolithic period [4.14.6] and early historical remains.

IAR 1959-60.

Brahmanvel, Dt Dhule. Late Stone Age (Mesolithic [4.5]) and Chalcolithic [4.14.6] burial site.

IAR 1965-6.

Brahmanwara-Thadi, Dt Akola. Middle Stone Age (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) site.

IAR 1965-6.

Brahmapuri, a locality situated in the w. part of Kolhapur town (16°41'; 74°71'), on the right bank of the Panchaganga, identified with Karavirapura referred to in the *Harivamśa*, so named as the goddess Mahā-Lakṣmī is said to have held it in her hand and regarded to be the first abode (*ādya-pīṭha*) of the goddess. The temple of Mahā Lakṣmī at Kolhapur was probably first built in the 9th century. The place is also known as Kollaksetra according to the local *māhātmya* and hence its name Kolhāpura which figures frequently in the late historical inscriptions, especially those of the Śilāhāras, as also in literature. Kolhapur is probably the same as Ptolemy's Hippokoura, the capital of Balaeokouros, identified with Vijivāyakura Sātakarni belonging to a branch of the Sātavāhanas ruling from Kolhapur in the early centuries of the Christian era.

Brahmapuri includes the remains of a mound the antiquity of which was first revealed in 1873, after which

many antiquities have turned up sporadically. Excavation taken up in 1944 by K.G. Kundangarh brought to light a rich bronze hoard consisting of an exquisite statuette of Poseidon, the Roman sea god, a number of bronze vessels of Roman origin and Alexandrian workmanship and a few bronzes—all from a house of the Sātavāhana period. This spectacular discovery led Sankalia and Dikshit (Sankalia and Dikshit, 1953) to dig the site systematically in 1945. Their work has revealed that the site was first occupied during the Sātavāhana period (c. 200 B.C. to A.D. 200). The houses of this period are built of baked brick with stone foundations. One of the houses consists of three small rooms with a veranda in front. A narrow passage, about 60 cm wide, separates one house from another. The predominant ceramic industry is a non-descript red ware, but more important is the finer ceramic, the Red Polished Ware [11.23] represented mostly by the sprinkler. Pottery finials are also present, as also a few terracottas and exquisite human figurines of kaolin. Among the minor finds mention should be made of a large number of beads of semiprecious stones and glass. The glass beads are numerous and noteworthy inasmuch as they display various techniques of manufacture; there are beads inlaid with gold foil between layers of glass, folded beads of transparent blue glass and beads of copper-red glass. Four-legged querns with one end projecting can be said to be characteristic of the early historical period at least in Maharashtra. Besides over 100 Sātavāhana coins have been found. All the bronzes from Kundangarh's excavation are datable to the Sātavāhana period, or more precisely to the middle or later half of the 2nd century A.D. The settlement was destroyed by fire some time during the reign of Yajñaśrī Sātakarni in the third quarter of the 2nd century A.D.

Kolhapur appears to have regained its importance in the early medieval period when a branch of the Śilāhāras began to rule from here from 12th century, and later still in the 15th century when the region was included in the Bahmani (1435-1518) kingdom. Structures of both these periods have been laid bare; they are built of stone rubble set in mud. But more interesting are the polychrome glass bangles of the Bahmani period which were commercially manufactured at Kolhapur. In the 16th century the w. part of the habitation was destroyed by floods of the Panchaganga, and in 1701 Aurangzeb filled in the low-lying areas with rubble and constructed walls of huge boulders over the site. It was occupied for a brief period but was again deserted.

Gupta, P.L., 1960-1, *Bull. Deccan College Res. Inst.*, 21, pp. 38-84.
Khandalawala, K., 1960, in *Lalit Kalā*, 7, pp. 29-75 (for metal objects).
Sankalia, H.D., & Dikshit, M.G., 1953, *Excavations at Brahmapuri (Kolhapur)*, 1945-6, Poona.—M.K. DHAVALIKAR

Brahmna, Dt Sangli. Tools of the Middle and Late Stone (Middle Palaeolithic [4.3]) and Mesolithic [4.5]) Ages.

IAR 1962-3.

Brijpur, Dt Panna. Rock-shelters [13] found in the Vin-dhyan range on the bank of river Baghan, about 40 km n.-e. of Pauna.

IAR 1961-2.

Broach. See BHARUCH.

Broughnagar, Dt Coimbatore. Port-holed cists [4.17.9].

AI, 4, 1947-8, p. 306.

Bualigarh, Dt Puri. Remains of 11th-12th century.

IAR 1968-9.

Buchehalli, Dt Kolar. Megalithic site with stone circles and cists [4.17.8].

Information from C. Krishnamurthy through A. Sundara.

Budagavi Hill, Dt Anantapur. Neolithic [4.6.8] habitation site. See AKKAMMAKONDA.

IAR 1965-6.

Budakkudi, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, pp. 515-18.

Budapanahalli, Dt Dharwar. Stone circles with the typical Black-and-red Ware [11.15.3].

IAR 1959-60.

Budavada, Dt Krishna. Megalithic [4.17.7] site.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras, p. 43.

Budbudi, Dt Jabalpur. Microliths [4.5].

IAR 1959-60.

Buddhani, Dt Guntur. Early historical [4.18.10] site.

Madras Arch. Rep., 18 June, 1892, p. 5. Rea, A., 1894, *ASI New Imperial Series*, 15.

Buddhudih, Dt Santal Parganas. Microliths [4.5].

IAR 1963-4.

Buddkern Pin, Dt Karnal. Late Harappa [4.10] site in village Budnapur.

Suraj Bhan & Shaffer, J.G., 1978, in *Man & Environment*, 2, p. 62.

Buddha Bhana (29°37'; 75°6'), Dt Hissar. Rang Mahal site.

IAR 1967-8.

Buddhakhera, Dt Saharanpur. OCW [11.5], PGW [11.14], NBPW [11.16], Śunga-Kushan and medieval wares.

IAR 1963-4; 1964-5; 1967-8; 1968-9.

Budhanpur, Dt Karnal. See KURUKSHETRA.

Budha Pushkar Lake, Dt Ajmer. The dunes around Budha Pushkar yielded Middle and Late Stone Age (Middle Palaeolithic [4.3] and Mesolithic [4.5]) tools. A copper fish-hook [6.6] of the Indus type was also found.

Misra, V.N., 1978, in *Man & Environment* 2, p. 74. Agrawala, R.C., 1979, in *ibid.*, 3, p. 92.

Budhej, Dt Kheda. Ceramics discovered from the site are similar to those from RANGPUR II C and LOTHAL B. Besides, terracotta cakes of oval and triangular shapes [6.27] were found.

IAR 1971-2. Momin, K.N., 1976, in *Arch. Congress & Seminar*, 1972, Kurukshetra.

Budhel, Dt Bhavnagar. 'Protohistoric' site (of unspecified nature).

IAR 1972-3.

Budhena, Dt Bulandshahr. Early historical site yielding

coarse grey ware, black-slipped ware [11.13] and plain red ware of the Śunga-Kushan assemblage.

IAR 1965-6.

Budher, Dt Saharanpur. PGW [11.14] and early historical site.

IAR 1964-5.

Budidepadu, Dt Kurnool. Neolithic [4.6.8] implements along with microliths and sherds of the burnished grey and black-painted red wares.

IAR 1962-3.

Budihal¹, Dt Anantapur. Neolithic [4.6.8] site yielding celts, adzes, chisels, scrapers, flakes, hammer-axes, mullers, pestles, etc.

Footte, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Budihal², Dt Bijapur. Ash mound [14.3] yielding pinkish-red ware, grey ware of BRAHMAGIRI fabric, black-painted red ware, a solitary sherd of cream-slipped ware, ground stone celts, hammer stones, rubber stones and querns and blade tools of chert, fluted cores, crested-ridge flakes and parallel-sided blades. Megalithic stone circles [4.17.8] were also found.

IAR 1961-2; 1965-6.

Budihal³, Dt Dharwar. Lower Palaeolithic [4.2] site.

Joshi, R.V., 1955, *Pleistocene Studies in the Malaprabha Basin*, Poona & Dharwar, fig. 5.

Budihal⁴, Dt Gulbarga. Neolithic [4.6.9]-Chalcolithic [4.14.8] site with an ash-mound [14.3].

IAR 1965-6. Paddayya, K., 1973, *Investigations into the Neolithic Culture of the Shorapur Doab, s. India*, Leiden, pp. 6-7.

Budhiana hills, Dt Gaya. Among other remains a 13 m long drain was discovered on the w. periphery of the Budhiana hills. The large size of the stones resembles those used in the fortification walls of RAJGIR.

IAR 1960-1.

Budhi Nadi (29°37'; 75°6'), Dt Hissar. Rang Mahal [11.24] site.

IAR 1967-8.

Budhini, Dt Raichur. Ash mound [14.3].

AR Hyderabad Dept of Arch., 1937-8, p. 7.

Budhitittu, **Biditittu**, **Booditittu**, Dt Mysore. Excavation at the site on the s. bank of the river Swaranamukhi revealed remains of occupation belonging to the degenerate stage of the Neolithic culture [4.6.9]. Thick burnished grey and brown wares along with a limited quantity of Megalithic black-and-red ware [11.15.3] were obtained indicating a stage of culture when the intrusive Megalithic culture overlapped with the local Neolithic culture. A noteworthy type in the burnished pottery group consisted of head-rests [12.5] known from T. NARSIPUR. No Neolithic celts were found in the excavation, although quite a few were collected from the surface. The Russet-coated Painted Ware [11.22] was found as also some fragmentary inscriptions in Kanarese and Tamil.

Hanumantha Rao, K., & Nagaraju, S., 1974, *Excavations at Hemmige, Mysore*, p. 5. IAR 1959-60; 1960-1; 1961-2; 1968-9.

Budhpur, Dt Bankura. Microliths [4.5].

IAR 1959-60.

Budhudihi, Dt Ranchi. Microliths and an Asura habitation [14.4] site.

IAR 1964-5.

Budikanama, Dt Bellary. Neolithic [4.6.9] site.

Footte, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, pp. 77-8.

Budikote, Dt Kolar. Neolithic [4.6.9] site yielding polished tools, burnished grey ware, red, black and black-and-red wares.

IAR 1971-2; 1972-3.

Budipapadu. See SRISAILAM.

Budnal, **Budinhal**, Dt Gulbarga. Chalcolithic [4.14.8] site.

Paddayya, K., 1973, *Investigations into the Neolithic Culture of the Shorapur Doab, s. India*, Leiden, p. 11.

Budnapur, Dt Chitradurga. Megalithic [4.17.8] site with stone circles.

Seshadri, M., 1956, *Stone-using Cultures of Pre- & Protohistoric Mysore*, London, p. 63.

Bugga¹, Dt Karimnagar. Mesolithic [4.5] site at the foot hills of the Tankellapalli range.

Gururaja Rao, B.K., ed., 1978, *Decade of Arch. Studies in s. India*, Dharwar, p. 49.

Bugga², Dt Kurnool. Near the Bugga temple on the Kurnool-Betam-Charla road, a rock-shelter [13] having paintings in red ochre was discovered with chalcedony microliths, such as fluted cores, scrapers, points and flakes occurring in its vicinity.

IAR 1959-60.

Bugganipalli, Dt Kurnool. Lithic tools and megaliths [4.17.7] were found close together.

IAR 1959-60.

Bugian, Dt Ganganagar. Typical Harappa [11.3] pottery, painted sherds and reed-impressed pottery. See SARASVATI VALLEY.

Unpublished.

Buhari. See PURNA VALLEY.

Buhiramdibha, Dt Medak. Microlithic [4.5] site.

IAR 1963-4.

Bujawar, Dt Jodhpur. Microlithic dune site [4.5]

Agrawal, D.P., 1978, in *Man & Environment*, 2, p. 75.

Bulandibagh. See PATALIPUTRA.

Bulandpur Kheri (Sat Kumbha), Dt Rohtak. Early historical site.

Jour. Haryana Studies, 3, 1, p. 6.

Buramara (22°6'; 86°39'), Dt Mayurbhanj. See KULIANA.

Burchenka, Dt Jabalpur. Neolithic [4.6] site.

Madhya Pradesh ki Ruparekha, p. 38.

Burdakhol, Dt Ganjam. Microliths [4.5].

IAR 1963-4.

Burdhana, Dt Sagar. Lower Palaeolithic [4.2] site.

Madhya Pradesh ki Ruparekha, p. 37.

Burhadi, Dt Ranchi. Prehistoric site yielding a stone celt [4.6.4].

Proc. Asiatic Soc. Bengal, 1870, p. 268.

Burhanpur, Dt E. Nimar. Microliths, red ware with black painting and black-and-red and red-slipped wares, grey ware with light cream slip and dull-grey ware were found on the Tapti, 8 km s.-w. of Burhanpur. NBPW [11.16] occurred together with the black-and-red, thin grey, black polished, red-slipped and some other red wares. Glazed ware of the medieval period was also collected.

IAR 1959-60; 1960-1.

Burj, Dt Patiala. BARA ware site. See GHAGGAR VALLEY.

Burju, Dt Ranchi. Prehistoric site yielding polished chisel [4.6.4].

Roy, S.C., 1916, in *Jour. Bihar & Orissa Res. Soc.*, 2, p. 67.

Burogaon, Dt Jhansi. Excavation revealed two adjoining temples facing a rivulet on the e. The temple walls were built on a cross-shaped plan, characterized by diagonal and angular projections in corners with a vestibule on *ardha-mandapa* in front and with an intervening space between the two temples. The *garbha-grha* was circular on plan with a projection for the entrance. The construction of the temples on a circular base and with angular and diagonal projections is unique. The temples were brick-built but the doors were of carved stone. From the lintels of the doors, one bearing the figure of Ganesa and the other Garuda, and from the discovery of a *linga* and an image of Visnu it was evident that one of the temples was dedicated to Siva and the other to Visnu. They may be dated to c. 10th century on the basis of the style of the icons.

IAR 1965-6.

Bursapali, Dt Sambalpur. Lower Palaeolithic [4.2] site.

Brown, C., 1917, *Catalogue of Prehistoric Antiquities in the Indian Museum, Calcutta*, Simla, p. 68.

Burudkha, Dt Dhule. Late Acheulian [4.2] site.

IAR 1966-7.

Buruhatu, Dt Ranchi. Prehistoric site yielding a broken chisel of state and a broken and polished chisel of quartzite [4.6.4].

Roy, S.C., 1916, in *Jour. Bihar & Orissa Res. Soc.*, 2, p. 75.

Buruma, Dt Ranchi. So-called Asura site [14.4] yielding copper bracelets and earthen jars, pots and cups.

Roy, S.C., 1921, in *Jour. Bihar & Orissa Res. Soc.*, 6, pp. 413-20.

Burwagarh, Dt Saharsa. Structural remains and antiquities of the Pala period.

IAR 1961-2.

Burwaha, Dt W. Nimar. Pebble tools [4.2].

IAR 1970-1.

Burzahom (34°10'; 73°52'), Dt Srinagar, 16 km n.-e. of Srinagar off Naseem-Shalimar road, about 1800 m above sea-level. The Megalithic menhirs here [4.17] situated on a *karewa* mound were first noticed by de

Terra and Paterson, 1939, who collected some bone and stone tools from here in a short excavation. Subsequent exploration by the ASI has brought to light about a dozen similar sites such as BEGAGUND, BRAH, GOFKRAL, HARIPARIGOM, JAYADEVI-UDAR, OLICHIBAG, PAMPUR, PANZAGOM, SOMBUR, THAJIWOR and WAZTAL, all located on *karewas* especially in the s.-e. parts of the Kashmir valley. Extensive excavation conducted at Burzahom by T.N. Khazanchi and his associates on behalf of the ASI from 1960 to 1971 (*IAR 1960-1*, p. 11; *1961-2*, p. 17; *1962-3*, p. 9; *1965-6*, p. 19; *1966-7*, p. 17; *1968-9*, p. 10; *1971-2*, p. 24) has brought to light a fourfold sequence of cultures: Pds I and II, Neolithic [4.6.1]; Pd III, Megalithic [4.17.1]; and Pd IV, early historical [4.18].

Pd I has revealed dwelling pits, circular or oval on plan, narrow at the top and wide at the base and also pit chambers, square to rectangular in shape. Both the circular pits and pit chambers were dug into the compact natural soil. The largest of the circular or oval pits has a diameter of 2.74 m at the top and 4.57 m at the bottom and a depth of 3.96 m. The sides of stone pits are plastered with *karewa* mud. The pits must have been dug out with long stone celts, traces of the cuts being visible during the excavation. Some of the deeper ones are provided with landing steps, which however do not lead down to the bottom indicating the use of a ladder for further descent. Descent into the smaller pits could be made from the ground level itself without steps. The filling in some pits consists of ash and charcoal in regular bands, which is clearly indicative of human occupation. Post-holes on the periphery of these pits suggest that there must have been some superstructure of perishable material such as birch, carried on wooden posts as a protective cover. Storage pits, 60 to 91 cm in diameter, containing some animal bones, stone and bone tools are in close proximity to the dwelling pits. On the floor of one of the dwelling pits has been found an antler. In three of the pits there were conical-shaped but irregularly dressed leaning stones, 91 cm to 1.51 m in length and 22 to 44 cm in width.

Apart from the dwelling pits the residential pattern at the earliest level consists of rectangular or squarish pit chambers. They are also cut into the natural soil down to a depth of about 1 m or even less. The size of the chambers also varies: the recorded size of one of them is 6.40 × 7.00 m. Some of them have depressions on all the four sides, deep post-holes on the four corners for superstructure and storage pits. Except one or two chambers stone or clay hearths containing mainly ash and burnt clay have found generally in the centre, indicative of human occupation. The pit chambers abound in the central portion of the mound and the circular/oval pits are mostly on the periphery.

No direct evidence of the cereals that were grown have come forth but a stone quern has been found in one of the pit chambers.

The total absence of any burials of this Pd may indicate some other practice for the disposal of the dead.

The incidence of a large number of well-polished bone and stone tools is noteworthy. The main types in bone are harpoons, needles with or without eyes, awls, spear-points, arrowheads, daggers and scrapers. Tools were also fashioned out of antler. The main types in stone are axes, chisels, adzes, pounders, mace-heads, points and picks.

The pottery is mostly crude and handmade, the colour being chiefly steel-grey and shades of dull-red, brown and buff. It is coarse in fabric and finish and is represented by the bowl, vase and stem. Mat impressions on many types especially on pots having a flat base have also been noticed.

In Pd II new structural patterns were evolved. The semi-subterranean pits and pit chambers were filled up and plastered with mud and sometimes covered with a thin coat of red ochre to serve as a floor. That extensive timber structures were erected is clear from the numerous post-holes on the regular floors in the rammed *karewa* soil. In one of the trenches as many as 45 well-arranged post-holes have been encountered in an area of 3.96 × 1.21 m at a depth of 2.13 m below surface. Probably partitions were provided for the larger timber structures. Such extensive structures suggest some sort of community living. Well-arranged post-holes on floors and mud and mud-brick structures have also been noticed.

An important discovery in this Pd is an engraved stone slab found fixed in a rectangular structure forming some sort of tank with the engraved face placed upside down making it non-functional at the place of its occurrence. The structure is in the middle levels of this Pd. The engraving on the slab depicts a hunting scene showing an antlered deer being pierced from behind with a long spear by a hunter and an arrow being discharged by another hunter from the front (Pande, 1973). The topmost portion shows two suns and a dog. Towards the top the slab is partially damaged as a result of which the uppermost part of the scene is lost to a small extent. Another stone slab shows an incomplete scene.

Numerous human and animal burials have been found. Humans were buried both primarily and secondarily in oval pits, mostly dug into the house floors or in the compound, the filling being ash, stone pieces and pot sherds. Trepanning has also been noticed on one skull [15.2]. In secondary burials skulls and long bones were preferred. Along with human bones those of dogs and antlered deer occur. The ritualistic burial of animals is also an interesting feature. As in human burials animals were

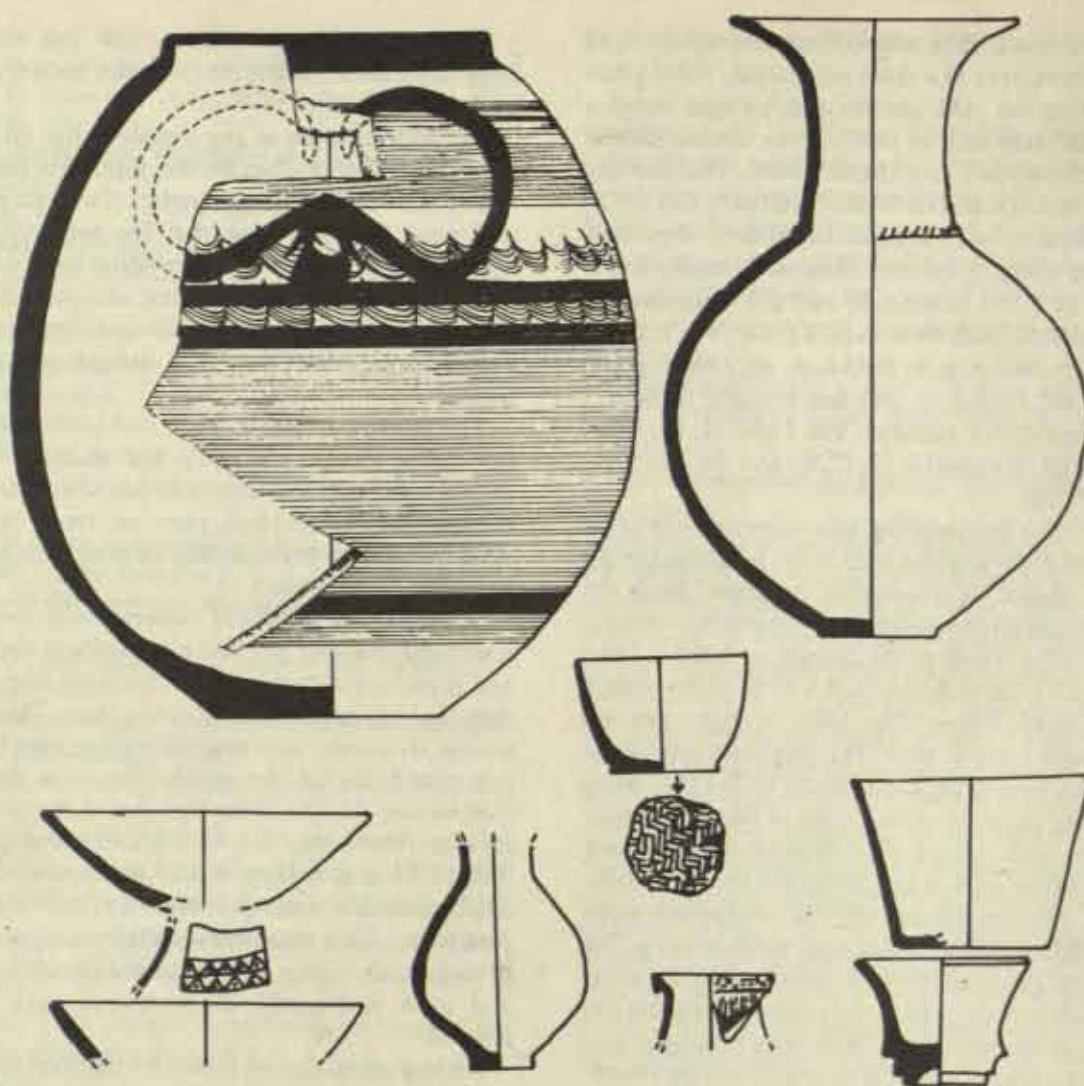


Fig. 7. Burzahom: pottery from periods I and II. Red ware jar with horned design and jar in black burnished ware, top left and right respectively from period II, rest from periods I and II.

buried in oval pits inside the house complex or in the habitation area. The orientation of almost all the skeletons is n.-s. Sometimes pet animals are buried with human skeletons in the same pit. The animals represented in the burials are (1) the domestic dog of various types, (2) antlered deer, (3) wolf, and (4) wild urial. The following animals are also represented: (1) the pig, (2) *nilgai*, (3) domestic humped cattle, (4) Indian domestic buffalo, (5) domestic goat, (6) domestic sheep, and (7) snow leopard. The horse is missing at all levels.

The objects both in stone and in bone of this Pd are similar to those of Pd I. Interesting are the harvesters in stone and bone—rectangular or semilunar in form with a sharp cutting edge and pierced holes at the upper end, double-edged picks in stone and long-sized needles with or without eye in bone. A unique composite tool in bone

has also been found. A single copper arrowhead is reported from the end of the Pd.

The pottery is generally handmade. A burnished black ware of medium fabric which is the *de luxe* ware of the Pd makes its appearance. There are the dish with provision for a stand, bowl, high-necked jar, etc. Mat impressions on the bases continue on many types. A wheel-made red-ware pot with 950 carnelian and agate beads belongs to the end of the Pd. A few painted pots are also found. However the most important find from the early levels of the Pd is a red-ware wheel-made painted pot with a horned figure, reminiscent of similar designs from KALIBANGAN I.

Although there is no indication that the Harappa culture [4.9] which co-existed with the Neolithic of Kashmir had any contact with each other, this point

needs further examination.

The Neolithic culture is followed by the Megalithic associated with the setting up of menhirs [4.17] to erect with wide pits were cut. The Megalithic people used wheel-made pots of gritty red ware. Bone and stone tools continue to be in use along with copper objects but the incidence is less. Rubble structures of this Pd have also been found.

The last activity at the site is in the early historical period, with mud-brick structures. The pottery is red ware of fine-to-medium fabric, often slipped and mostly wheel-made. Iron objects occur.

Following are some of the ^{14}C for the Neolithic levels: 1535 ± 110 B.C.; 1825 ± 100 B.C.; 1850 ± 125 B.C.; 2025 ± 350 B.C.; 2100 ± 115 B.C.; 2225 ± 115 B.C.; and 2375 ± 210 B.C.

The most important features which single out the n.-w. Neolithic culture as typified at Burzahom from the other Neolithic cultures of India are: the semisubterranean dwelling pits and pit chambers with post-holes on the periphery of the dwelling pits and within the chamber of the pit chambers, harvesters in stone, the prolific use of bone tools such as harpoons, daggers and arrowheads and tools fashioned out of antlers, the practice of placing domestic dogs in the graves of their masters, the sacrifice of dogs and the application of red ochre on the dead. These unique finds link the n.-w. Neolithic with n. China, e. Asia and some sites in USSR as also Afghanistan and Iran.

Asthana, S., 1977, *History & Arch. of Indian Contacts with other Countries from the Earliest Times to 300 B.C.*, Delhi, pp. 79-80, de Terra, H., & Paterson, T.T., 1939, *Studies on the Ice Age in India & Associated Human Cultures*, Washington, Kaw, R.N., 1979, in Agrawal, D.P., & Chakrabarti, D.K., ed., *Essays in Indian Proto-history*, Delhi, Khazanchi, T.N., 1976, in *Illustrated Weekly of India*, Sept. Pande, B.M., 1970, in *Anthropologist*, 17, 1 & 2; 1972, in *Jour. Indian Anthropologist Soc.*, 7, 2; 1973, in *Asian Perspectives*, 14 (for carved stone). Pant, R.K., 1979, in *Man & Environment*, 3 (for microwear studies on neoliths). Thapar, B.K., 1965, in Misra, V.N., & Mate, M.S., ed., *Indian Prehistory: 1964*, Poona. — R.N. KAW

Butana, Dt Rohtak. Late Harappa [4.10] site.

Jour. Haryana Studies, 3, 1, p. 3.

Buthamahall Hill, Dt Anantapur. Neolithic [4.6.8] habitation site. See AKKAMMAKONDA.

IAR 1965-6.

Buxar ($25^{\circ}34'$; $84^{\circ}1'$), Dt Bhojpur, on the Ganga which has been gradually cutting the mound, a site with a long

taditional history of the Rāmāyanic age and having a medieval fort built on a part of it. A haphazard digging in 1926-7 yielded female terracotta figurines with flowing skirts, regarded as 'prehistoric' (Banerji-Śāstri, 1930, 1934), and two seals with early Brāhmī legends. Systematic excavation in 1963-5 by B.P. Sinha *et al.* (*IAR* 1963-4, p. 8) showed three Pds, though the natural soil could not be reached.

As excavated, Pd I yielded terracotta animal and human figurines [17]. The animal figurines of elephant, ram and horse have painted yellow horizontal strokes on the back, leg and tail. The female figurines indicate an archaic style, with incised eyes, punched nose, punched ear-lobes and perforations on the head indicating hair-dressing. Grey ware and black-and-red ware associated with the NBPW [11.16] are met with, in shapes like the basin, conical bowl, bowl with internally knobbed base and dish in black ware. The date of the Pd may be put to 600 to 400 B.C.

In Pd II the NBPW is in abundance with the usual association of grey and black-and-red wares. The lipped bowl in red ware makes its first appearance here. Terracotta sealings impressed with symbols found on punch-marked coins, [3.1], bone points and antimony rods [18.1] are present. Peculiar head-dresses and ornaments and elongated faces distinguish the female terracotta figurines from the usual so-called Mauryan terracottas.

Pd III is represented by the sprinkler [11.23], spouted vase and lid-cum-bowl. The terracotta human figurines have the typical Kushan head-dress. The Pd may have ended by the 3rd century A.D. and the site remained unoccupied till medieval times.

Banerji-Śāstri, A.P., 1930, in *Jour. Bombay Hist. Soc.*, 3, p. 187; 1934, in K.B. Pathak, *Commemoration Volume*, Bombay, p. 248. — B.P. SINHA

Byadagi, Dt Dharwar. Megalithic [4.17.8] site with stone circles and also early historical [4.18.11] remains.

Jour. Asiatic Soc. Bombay, 38, pp. 154-64. Sundara, A., 1975, *Early Chamber Tombs of S. India*, Delhi, pp. 43-5.

Byakod, Dt Bijapur. Thick coarse grey ware with ribbon flakes of chert.

IAR 1958-9.

Bylur, Dt Mysore. Megalithic cist burials [4.17.8].

IAR 1961-2.

C

Calicut, Dt Kozhikode. A Megalithic rock-cut cave [4.17.10] near Calicut with an urn with pointed bottom.

AI, 12, 1956, pp. 101, 111.

Campā, Dt Bhagalpur, 5 km w. of Bhagalpur, present-day Champānagar to the n. of Nathnagar railway station. The extensive mound is largely overbuilt by modern buildings. Campā was the capital of Aṅga, one of the *mahā-janapadas* annexed by Bimbisāra of Magadha in the 6th century B.C. Excavation started in 1969-70 and continued thereafter by the author (*IAR* 1969-70, p. 2; 1970-1, p. 4; 1971-2, p. 4) has revealed a defensive fortification surrounded by a deep moat and the bed of the Ganga. The trenches across the fortification and in areas within it near the confluence of the Champa-nala and the old bed of the Ganga have revealed that the city was occupied from 500 B.C. as no occupational layer prior to the NBPW [11.16] has been traced, though due to the subsoil water table the lowest levels of the NBPW could not be reached. (Elsewhere, 4.18.3, the author has calibrated ¹⁴C dates, which would take the beginning of the NBPW to an earlier date.)

Pd I has yielded the finest varieties of the NBPW in all brilliant colours, some in double colours and some painted with circular dots, sigmas, horizontal lines and yellow paint, and also the associated black ware, black slipped ware [11.13] and grey, red and black-and-red [11.6.4] wares. Quantitatively the largest number of NBPW sherds have been found in the earliest layers. A number of soapstone jewellers' moulds inscribed with human and animal designs and a beautiful ivory (?) female figurine with articulate limbs and grooves for fitting the loose limbs, copper ear ornaments and stone beads are significant discoveries pointing to the richness of industrial crafts of the city during this Pd. Another important find is an exceedingly well-built plastered drain in the village outside the fortified area; it empties into the Champa-nala even today. The drain runs in an e.-w. direction and has been traced to a length of 4-90 m with a gap of 2-20 m caused by robbing. The width of the drain at the top is 35 cm and at the bottom 25 cm, the depth being 52 cm. The drain, sealed by a layer which yields good varieties of the NBPW and associated sherds, can on stratigraphic and ceramic grounds be placed in the 4th century B.C. While no structural remains of the Pd and its subphases could be positively

traced, some evidence of brick-built structure at its top levels has been detected in one trench. Another interesting find in the late NBPW phase is the sprinkler in the same ware. The Śuṅga and Kushan periods are well represented by remains of numerous brick-built house-complexes, characteristic Śuṅga terracottas, particularly plaques of mother goddess [12.6] with weapons around the head. A female figure with a peculiar head dress of w. Asian type and a winged female figure are noteworthy finds.

Trenches across the rampart have revealed two clear phases of its construction. The gushing out of the subsoil water has not allowed the tracing of the foundation level of the rampart wall but by pumping out the water the natural soil of yellowish hue mixed with *kankar* has been touched. Overlying this is a deposit of dirty brownish and black soil surface from which have been picked up a number of crude black-and-red ware sherds unassociated with the NBPW. It may suggest an earlier flimsy occupation of the black-and-red ware people before the advent of the NBPW, to the last phase of which the first phase of the rampart may be placed. The rampart is characterized by a thick wall of blackish soil with a gentle slope on the outer side. A few copper cast coins [3.1], terracotta sling balls, charcoal showing fibres of burnt bamboos and a number of red ware, Black-slipped Ware and a very few late NBPW sherds are the important finds. The second phase is characterized by a massive construction: the rampart wall was built by the dumping over of yellow and red soil to form a thick wall and it was raised against a 3-80 m wide embankment of brick debris possibly to prevent scouring by water. The maximum height traced is 5.80 m. Further w. of the debris-built embankment a high brick wall was raised right over the rampart to strengthen the overall defensive system of the fort; however this wall has been completely robbed. Characteristic Śuṅga antiquities including miniature pots, cast copper and punch-marked coins [3.1] with silver coating and numerous weapons like bone arrowheads, socketed arrowheads, socketed iron spearheads and terracotta plaques have been discovered. This phase may be placed in 150-50 B.C. Associated with it is a rammed brick floor with six post-holes, which may represent the provision of a watchman's room on the rampart.

—B.P. SINHA

Caradepootoor, Dt Chingleput. Lower Palaeolithic [4.2] site on the river Naranavaram.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 172.

Chabala Hill, Dt Anantapur. Neolithic mealing stone [4.6.8] of basalt.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Chabal Khurd, Dt Amritsar. NBPW [11.16] site. IAR 1966-7.

Chachai Falls, Dt Rewa. Microlithic [4.5] and Neolithic [4.6] site. Megalithic stone circles [4.17.3] were also found.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras. IAR 1957-8; 1963-4.

Chachana (22°25'; 71°50'), Dt Surendranagar. Late Harappa [4.10] site corresponding to RANGPUR II B.

AI 18 & 19, 1962 & 1963, p. 205.

Chacho Nawatoli, Dt Ranchi. Prohistoric site yielding a triangular polished celt [4.6.4].

Jour. Bihar & Orissa Res. Soc., 2, 1916, p. 66.

Chadiala-Khanpur, Dt Rupnagar. PGW [11.14] site. IAR 1962-3.

Chagatur, **Chagataru**, Dt Mahbubnagar. Megalithic dolmenoid cists [4.17.7]. See SIRSAILAM.

IAR 1965-6.

Chagollu, Dt Prakasam. Lower [4.2] and Middle Palaeolithic [4.3] tools found on the surface just n. of Madagapalem. The tools comprise Abbevillian and Acheulian handaxes, scrapers, awl-like tools and worked flakes.

Aiyappan, A., *Manley Collection of Stone Age Tools*, Mem. ASI, 68, p. 9.

Chaibasa (22°36'; 85°48'), Dt Singhbhum. Palaeoliths [4.2-4] and microliths [4.5]. See CHAKRADHARPUR.

IAR 1960-1.

Chainpur, Dt Ranchi. Middle and Late Stone Age (Middle Palaeolithic [4.3] and Mesolithic [4.5]) site.

IAR 1965-6.

Chajoli. See 9.2.

Chak 11, Dt Ganganagar. Microliths and Harappa pottery [11.3]. See SARASVATI VALLEY.

Unpublished.

Chak 15, Dt Ganganagar. Rang Mahal Ware [11.24] from Chak 15/1; Rang Mahal Ware, terracotta bull, bead and shell bangles from Chak 15/2; microliths and Harappa [11.3] and Rang Mahal Wares from Chak 15/3; and PGW [11.14], perforated pottery and terracotta ball from Chak 15/4. See SARASVATI VALLEY.

Unpublished.

Chak 21, Dt Ganganagar. Microliths and Harappa Ware [11.3]. See SARASVATI VALLEY.

Unpublished.

Chak 39, Dt Ganganagar. PGW [11.14] and Rang Mahal Ware [11.24] from Chak 39/1; and microliths, PGW, painted Rang Mahal sherds, terracotta figures and shell

and terracotta bangles from Chak 39/2. See SARASVATI VALLEY.

Unpublished.

Chak 40, Dt Ganganagar. PGW [11.14] and Rang Mahal Ware [11.24]. See SARASVATI VALLEY.

Unpublished.

Chak 40-Tibba, Dt Ganganagar. Rang Mahal Ware [11.24]. See SARASVATI VALLEY.

Unpublished.

Chak 43, Dt Ganganagar. Microliths and Harappa Ware [11.3]. See SARASVATI VALLEY.

Unpublished.

Chak 41, Dt Ganganagar. Microliths and Harappa [11.3] and Rang Mahal Wares [11.24]. See SARASVATI VALLEY.

Unpublished.

Chak 58, Dt Ganganagar. One or two doubtful Harappa sherds [11.3] and Rang Mahal Ware [11.24] from Chak 58/1; Rang Mahal Ware from Chak 58/2; and a few non-descript sherds reminiscent of Rang Mahal Ware and microliths from Chak 58/3. See SARASVATI VALLEY.

Unpublished.

Chak 58-Tibba, Dt Ganganagar. Non-descript pottery reminiscent of Rang Mahal Ware [11.24]. See SARASVATI VALLEY.

Unpublished.

Chak 59, Dt Ganganagar. PGW [11.14], Rang Mahal Ware [11.24], terracotta beads and ball. See SARASVATI VALLEY.

Unpublished.

Chak 71, Dt Ganganagar. Microliths, PGW [11.14], Rang Mahal Ware [11.24], faience [16.6] bangles, terracotta toy wheels and a glass bead. See SARASVATI VALLEY.

Unpublished.

Chak 71-Tibba, Dt Ganganagar. Microliths, Harappa Ware [11.3] and faience bangles. See SARASVATI VALLEY.

Unpublished.

Chak 72/1, Dt Ganganagar. PGW [11.14] impressed pottery, Rang Mahal Ware [11.24] and faience [16.6] bangles. See SARASVATI VALLEY.

Unpublished.

Chak 72/2, Dt Ganganagar. PGW [11.14], impressed pottery, Rang Mahal Ware [11.24] and shell bangles. See SARASVATI VALLEY.

Unpublished.

Chak 72/3, Dt Ganganagar. Harappa Ware [11.3] and faience bangles [16.6].

Unpublished.

Chak 74, Dt Ganganagar. PGW [11.14], impressed pottery, Rang Mahal Ware [11.24] and a faience bangle fragment [16.6]. See SARASVATI VALLEY.

Unpublished.

Chak 75, Dt Ganganagar. Harappa [4.9] site. See

SARASVATĪ VALLEY.

Unpublished.

Chak 77, Dt Ganganagar. A large number of non-descript potsherds and microliths. See SARASVATĪ VALLEY.

Unpublished.

Chak 80, Dt Ganganagar. Harappa Ware [11.3] and Rang Mahal Ware [11.24], two copper coins including one seemingly punch-marked [3.1], faience bangle, a brick and a chert blade. See SARASVATĪ VALLEY.

Unpublished.

Chak 86 (29°14'; 73°14'), Dt Ganganagar. PGW [11.14] site in the SARASVATĪ VALLEY.

AI, 10 & 11, 1954 & 1955, p. 139.

Chak 87, Dt Ganganagar. PGW [11.14] and impressed pottery. See SARASVATĪ VALLEY.

Unpublished.

Chakadoba, Dt Midnapur. Handaxes and large scrapers [4.2.3].

IAR 1968-9.

Chakalia, Dt Panch Mahals. Mesolithic [4.5] site.

IAR 1970-1.

Chakalpet, Dt Chandrapur. A number of stone circles [4.17.6].

IAR 1958-9.

Chakannagar Kheda, Dt Etawah. Site (Chakranagara of the *Mahābhārata*) on the right bank of the Yamuna yielding sherds of the PGW [11.14] and NBPW [11.16] as well as terracotta figurines of the early Christian era.

IAR 1969-70.

Chak-Bhammi, Dt Chandrapur. Late Stone Age (Mesolithic [4.5]) tools.

IAR 1962-3.

Chakiaro, Dt Panch Mahals. See CHAMPANER.

Chakki Khapa, Dt Nagpur. Megalithic stone circles [4.17.6].

IAR 1968-9.

Chakkur, Dt Mysore. Megalithic site with cairns and stone circles [4.17.8].

Mysore Arch. Rep. 1947-56, p. 51.

Chakla, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1961-2.

Chakond, Dt Banda. A large number of polished stone celts with pointed butt, splayed edge, convex sides and lenticular cross-section [4.6.3] were found.

IAR 1954-5.

Chak-Patna, Dt Saharanpur. PGW [11.14] and associated wares.

IAR 1963-4.

Chakrabada, (**Chakrabanda**), Dt Kolar. Megalithic site with cairn circles and cists [4.17.8].

IAR 1972-3.

Chakradharpur (20°42'; 85°30'), Dt Singhbhum, on the left bank of the Sanjai, known for a long time for its rock-paintings [13] and, with its neighbourhood further e., covering CHAIBASA and SINI, for its yield of Stone

Age artefacts (Ball, 1865, pp. 118-20; Anderson, 1917, pp. 349-52; Ghosh, 1932; etc.). The first systematic exploration of the valley was undertaken by Ghosh, 1966, 1970, 1971, on behalf of the Dept. of Anthropology, Univ. of Calcutta, who identified in the Pleistocene [9.8.2] deposits of the river section three Palaeolithic [4.2.4] industries, successively: (i) a chopper-biface industry (Abbevillian), with crude choppers, Acheulian I, predominantly with handaxes and crude side-scrapers, Acheulian II with true cleavers, and Acheulian III with an advance over the preceding stage; (ii) flake industry, with limited handaxes but with a preponderance of scrapers; and (iii) a flake-blade industry, with end-scrapers and burins as characteristic types.

Anderson, 1917, in *Jour. Bihar & Orissa Res. Soc.*, 3, pp. 349-72.

Ball, B., 1865, in *Proc. Asiatic Soc. Bengal*, pp. 127-8. Ghosh, A.K., 1966, in *Actes du VIF Congrès International des Sciences préhistoriques et Protohistoriques*, 1966, Prague; 1970, in *Trans. American Philosophical Soc.*, New Series, 60; 1971, *Arch. & Physical Anthropology in Oceania*, 6, 2, pp. 87-101. Ghosh, M., 1932, *Rock-paintings and other Antiquities of Prehistoric & Later Times*, Mem. ASI, 24.

Chakranahalli, Dt Kolar. Megalithic burial site [4.17.8].

IAR 1969-70.

Chakrasil, Dt Dhenkanal. Series I (Lower Palaeolithic [4.2]) tools.

IAR 1957-8.

Chakrigarh, Dt Saran. Structural remains, the size of the bricks being 45.7×25.4×7.6 cm.

IAR 1961-2.

Chakulia, Dt Singhbhum. Microliths [4.5] and neoliths [4.6.4].

IAR 1959-60.

Chak-Vithalwada, Dt Chandrapur. Microliths and Megalithic ± stone circles [4.17.6].

IAR 1960-1.

Chalaganahalli, Dt Kolar. Megalithic site with stone circles [4.17.8], Black-and-red Ware [11.15.3] and red ware.

IAR 1972-3.

Chalala, Dt Junagadh. Red Polished Ware [11.23].

IAR 1957-8.

Chalpa-khurd, Dt E. Nimar. Microliths [4.5].

IAR 1959-60.

Chamak, Dt Amravati. Early historical site yielding black-and-red ware.

IAR 1962-3.

Chamarajanagar Taluk, Dt Mysore. Cairn circles and cists [4.17.8].

IAR 1960-1.

Chamba, Dt Lohit, Palaeolithic [4.2, 3] site on the terraces of the Kamlang river between 914.4 and 1219.5 m in height yielding choppers, a protohandaxe, cleavers, scrapers, flakes and cores. A few neolithic implements [4.6.6] including a shouldered celt were also found.

Bopadikar, B.P., 1971, in *Arch. Congress & Seminar, Nagpur*. IAR 1969-70.

Chamba-ghat, Dt Kangra. Lower Palaeolithic [4.2] site

in the BEAS VALLEY.

Sankalia, H.D., 1962, *Prehistory & Protohistory of India & Pakistan*, Bombay, pp. 16-20.

Chambal valley, more than 100 rock-shelters [13] were discovered together with Palaeolithic and Microlithic sites. Basai and Narsinga yielded tools of Series I (Lower Palaeolithic [4.2]) and Series II (Middle Palaeolithic [4.3]). At Parmar-Kheri microliths [4.5] were found while Tungni, Metwas, Takraoda, Maori, Ghata-Bilod, Betnia and Pseva (Pewa) had painted pottery.

IAR 1956-7; 1958-9.

Chamdiha, Dt Mirzapur (?). Middle Stone Age tools (Middle Palaeolithic [4.3]) comprising blades, flakes, scrapers and cores.

IAR 1962-3.

Chamkaur, Dt Rupnagar. Harappa pottery [11.3] and PGW [11.14].

IAR 1953-4. Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 122.

Chammakhandi, Dt Ganjam. Microliths [4.5].

IAR 1963-4.

Champa, Dt Keonjhar. Tools of Series I (Lower Palaeolithic [4.2]) comprising bifacial handaxes, cleavers, scrapers, choppers and chopping tools of almost all types showing the different techniques of manufacture and stages of technical development. Tools of Series II (Middle Palaeolithic [4.3]) included points, scrapers, borers, burins, blades, cores and flakes.

IAR 1958-9.

Champakheri, Dt Chittaurgarh. White-painted black-and-red ware [11.6.2] site in the Wagan valley.

IAR 1962-3.

Champala, Dt Dhule. Late Stone Age (Mesolithic [4.5]) tools.

IAR 1960-1.

Champanagar, Dt Bhagalpur. See CAMPĀ.

Champaner, Dt Panch Mahals. A medieval capital of Gujarat on the Pavagarh hill, in the vicinity of which Stone Age tools have been discovered at BHAMARIA, CHAKIARO, GOKALPURA and JHANKHARIA, on the banks of the streamlets Karad, Jorvan and others. A handaxe in the make-up of a medieval wall at Champaner itself gave the clue for further investigation. Large rhyolite cores, scrapers or choppers, handaxes, cleavers and flakes form the earliest, Lower Palaeolithic [4.2], group occurring in the lowest gravel. Smaller flakes of a later series (Middle Palaeolithic [4.3]) with a preference for crypto-crystalline material occur much higher up in the Black Cotton Soil [9.1], the formation of which might be coeval with the tools. Microliths are available on the Black Cotton Soil as well as on the loessic banks of nullahs, rivers and dunes around.

Mehta, R.N., 1977, *Prehistoric Champaner*, Vadodara.—H.P. RAY

Chamu, Dt Jodhpur. Microlithic site on a high dune on the n.-e. side of the road near the village of Chamu.

Agrawal, D.P., 1978, in *Man & Environment*, 2, p. 75.

Chamundagarh, Dt Muzaffarpur. Early historical remains comprising remnants of a fort wall and moat, besides sherds of the NBPW [11.16] grey and red wares.

IAR 1970-1.

Chanahta, Dt Varanasi. Black-and-red Ware [11.6.3].

IAR 1962-3.

Chanat, Dt Hissar. Chanat-I (Dahar ka kheda), Chanat-II (Karasana) and Chanat-III (Bhimala) yielded pre-Harappa [4.8] and Harappa [4.9] remains.

Silak Ram, 1972, unpublished thesis, Kurukshetra Univ.

Chanchoda, Dt Guna. Late Stone Age tools (Mesolithic [4.5]).

IAR 1964-5.

Chandabila, Dt Midnapur. Lower Palaeolithic [4.2] tools.

IAR 1968-9.

Chanda-Kheri, Dt Ambala. Grey ware, Black-slipped Ware [11.13] and black-painted red ware.

IAR 1963-4.

Chandala, Dt Chandrapur. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAR 1970-1.

Chandala Bhata, Dt Sagar. Microliths [4.5] and rock-shelters [13] were found 3 km from SAGAR.

IAR 1958-9.

Chandal-no-Ghod, Dt Banas-Kantha. Painted red ware.

IAR 1964-5.

Chandanapalya, Dt Mysore. Megalithic cist burials [4.17.8].

IAR 1961-2.

Chandanpur¹, Dt Dharwar. Early historical [4.18.11] site. See ANVERI.

IAR 1959-60.

Chandanpur², Dt Kanpur. NBPW [11.16] site.

IAR 1968-9.

Chandapur, Dt Dharwar. Early historical [4.18.11] site. See ANVERI.

IAR 1959-60.

Chandatari, Dt Allahabad. Painted rock-shelter [13].

IAR 1969-70. Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad, p. 55.

Chandauli, Dt Varanasi. Black-and-red Ware [11.6.3].

IAR 1962-3.

Chandausi, Dt Moradabad. Some antennae swords and one anthropomorphic figure [4.11].

Allahabad Museum, National Museum, Sanskrit Univ., Varanasi, Collections.

Chandavaram¹, Dt Nellore. Site yielding Megalithic Black-and-red Ware [11.15.3], red and all-black wares. Remains of *stūpas*, earthen bunds and fortifications were also noticed.

IAR 1965-6.

Chandavaram², Dt Prakasam. Buddhist site with sculptures carved in the AMARAVATI idiom situated on the right bank of the Gundlakamma river. Many *stūpas* and adjoining *vihāras* were also found. An inscription in

Brāhmī characters of the 2nd century A.D. and sherds of the Black-and-red Ware [11.15.3] red-slipped wares were also noticed.

IAR 1972-3.

Chandavolu, Dt Guntur. Early historical [4.18.10] site. Rea, A., 1894, *ASI New Imperial Series*, 15.

Chandawa, Dt Allahabad. Painted rock-shelter [13].

IAR 1969-70, Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad, p. 55.

Chande, Dt Pune. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1963-4.

Chandegaon, Dt Ahmadnagar. Series II tools (Middle Palaeolithic [4.3]) and early historical remains.

IAR 1959-60.

Chandera, Dt Sagar. Palaeoliths [4.2-4] and microliths [4.5].

IAR 1960-1.

Chanderi, Dt Guna. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3] tools.

IAR 1970-1.

Chandgad, Dt Bhavnagar. Red Polished Ware [11.23] site in the Shetrunji valley.

IAR 1960-1.

Chandgarh, Dt E. Nimar. Rock-shelter [13] with tools of the Middle and Late Stone Ages (Middle Palaeolithic [4.3] and Mesolithic [4.5]) in the vicinity.

IAR 1960-1; 1961-2.

Chandigarh (30°42'; 76°54'), capital of the Union Territory of that name, where in 1969 in the course of digging the foundations of a shopping complex in sector 17C the remains of a Harappa [4.9] cemetery were brought to light below 1 to 2 m thick deposit of alluvium. The Panjab Univ. conducted excavation in the area and a regular cemetery was discovered but the report is awaited. Next year, nearly 100 m to the e., Harappa pottery [11.3], stone querns, pestles [6.19] and a few other sundry objects came up along with the earth excavated for an underground structure. As it had been noticed at Harappa, ROPAR and KALIBANGAN—all Harappa sites—that the habitation area lies to the e. of the cemetery, seven trenches were laid here by the author and others of the ASI (*IAR 1970-1*, p. 30) in the expectation of the discovery of a Harappa settlement.

After digging through silt the habitation deposit though devoid of habitation horizons of layers was encountered. The pottery and other objects were deeply embedded in brown silt and water-borne pebbles. A sandy deposit separated the natural soil which was loamy interspaced with thin bands of *kankar* and over which lay the pottery-bearing strata.

The pottery shapes and painted motifs represent three traditions: SOTHI/KALIBANGAN I [11.2], Harappa and BARA. There are the Harappa shapes such as the dish-on-stand, cup-on-stand, pointed goblet, button-base

goblet, dish, beaker, lid, basin, trough, storage jar and ring stand. On a funnel-shaped vessel and on two other sherds inscriptions in Harappa characters [20.4.1] are available. The small-sized vase providing an easy grip for use, lid with central knob and basin with ridged incisions inside are analogous to the pre-Harappa shapes. Some of the painted motifs, such as latticed triangles, lenticulars, loops or meanders enclosed within bands, plant motif like twig and leaf and the curled motif which may be a variant of bucranium are also found on the SOTHI ware.

From the same deposit sherds betraying Cemetery H shapes, fabric and hue and a few sherds of the burnished grey ware akin to that used by the n.-w. Neolithic folk [4.61] have been recovered. An object of animal bone with serrated edge recalls a BURZAHOM find. The other finds include bull figurines, beads, bangles, toy-cart frames [16.17], wheels in terracotta [16.19], faience [16.6] and copper bangles, beads of paste and agate and stone objects such as querns, pestles and sling balls.

Ghosh, N.C., 1970, in *Conflux*, Sept.—N.C. GHOSH

Chandil, Dt Singhbhum. Microliths tools [4.5] and neoliths [4.6.4]. See CHAKRADHARPUR.

IAR 1959-60.

Chandipur, Dt Bhagalpur. Middle Stone Age (Middle palaeolithic [4.3] site.

IAR 1965-6.

Chandoli (19°10'; 73°58'), Dt Pune, a Chalcolithic site in village Chandoli Khurd, 5 km e. of Manchar, on the right bank of the river Ghod, a perennial stream. The site was discovered in 1957 (*IAR 1957-8*, p. 67). The surface collection consisted of Jorwe [11.11] and Malwa [11.10] wares, red/grey sherds and polished stone tools. Excavation was conducted by the Deccan College in 1960 with a view to knowing more about the upper Deccan Chalcolithic culture [4.14.6] and to augment the evidence of NASIK, JORWE and NEVASA. As the site has been very much disturbed by natural and human agencies a small area of about 60 m sq was available for digging. The 1-4 m thick habitation debris lies over the Black Soil [9.1] which in turn caps the yellow silt and is divided into two layers. Layer 1 is without any burnt clods, while layer 2 has such clods bearing bamboo matting impressions, indicating the wall material.

Though no complete house plan has been found, a fair idea can be had by piecing together the available evidence. The houses were rectangular on plan and walls constructed of bamboo screen plastered with mud. There were wooden posts to support the wall screen and thatched roof. An extant continuous floor, 2.4 × 4.8 m is rammed and plastered, with a saddle quern [6.19] embedded and storage jars partly buried in it. Hearths, one of them measuring 30 × 30 × 25 cm, are sunk in the floor, their sides and bottom plastered, with a mud column constructed over a flat stone placed in the centre

of the hearth. The cooking pot was evidently placed on the top of the column with fire all around. Similar hearths have been noticed at NEVASA and at INAMGAON. Circular mud platforms, 25 to 30 cm in diameter, are possibly meant to hold pots. Such circular mud platforms of larger dimensions have been found at INAMGAON, where the local people still make similar platforms and place storage bins over them. The area surrounding the floor being disturbed, the house to which it pertained could have been bigger. The saddle-quern indicates the practice of crushing grains on it with a rubber stone but the diet must have been supplemented by hunting, fishing and killing of domesticated animals.

The houses were lit with boat-shaped terracotta lamps [6.11] common at all the Chalcolithic sites in the Deccan. Of the pottery storage jars and cooking and drinking vessels of red/grey ware or coarse red ware are generally plain. Painted vessels of the Jorwe and Malwa fabrics were evidently for special use and rituals. The burial urns are in red/grey ware.

The Jorwe Ware is turned thin on wheel and baked at a high temperature. The prominent types are: the tubular-spouted pot; carinated and convex-sided bowl with or without spout; globular pot with narrow and constricted neck, bowl; and dish-on-stand. The designs painted on the red surface are bands, zigzags, diamonds and triangles either solid or filled in with lattice or slant lines, and antelopes. The designs appear mostly on the shoulder portion of the pots.

In the Malwa Ware the clay is coarse and is coated with a thick red slip. The shapes are: the convex-sided rimless bowl; globular pot with out-turned rim; bowl with channel-spout; goblet; and a bowl with three legs. The black-painted designs on the shoulder portion are vertical lines, latticed and hatched triangles and solid diamonds.

The cream-slipped ware and Lustrous Red Ware [11.9] are represented by a few sherds. The former is a typical ware of the Malwa culture [4.14.5] while the latter is found in RANGPUR II C and III. Some sherds of black ware representing the bowl with inconspicuous and featureless rim have also been found.

Coarse red ware is second to the Jorwe Ware in bulk. The shapes are: the spherical pot; bowl with short channel-spout; convex-sided bowl; storage jar; and dough plate. The decorations are pinched and punctured applied bands, incised lines and human figures. Red/grey ware is represented by utilitarian pots, such as: the globular pot with wide mouth useful as a cooking pot; convex-sided bowl; lid with knobbed handle; globular pot; bowl with tubular spout; dough plate; *kundā*; boat-shaped lamp; lamp with a handle; and square lamp-on-stand. The globular pot sometimes bears post-firing

painting with red ochre on the rim and is decorated with finger-tip depressions and cuts on applied bands.

The tools and weapons are made generally of stone and rarely of copper. Axes, adzes and chisels used for working wood are of strong blackish stone (dolerite) and are ground and polished, particularly on the cutting edge. Smaller tools and weapons are made from blades removed from chalcedony/agate cores. The required portions are retouched to convert them into points for arrowheads, knife-blades, saw-blades and lunates for making sickles and barbed spears. Copper is used sparingly but a few tools and weapons such as antennae-hilted daggers, axes, chisels and fish-hooks have been found. Beads of semiprecious stones like carnelian, agate, chalcedony and jasper, as also of copper, were strung on a thread of flax for making necklaces. Anklets, bangles and rings of copper were ornaments for legs, wrists and fingers.

The dead were buried in an extended posture in a grave dug in the living floor with a n.-to-s. orientation with the head towards the n.; the feet below the ankle were chopped off. Children were buried in two vessels placed mouth to mouth in a burial pit with the same orientation but their feet were spared. The vessels were kept in the grave possibly with some food and drink. Sometimes the dead were buried with their ornaments on.

The presence of Malwa, Jorwe and Rangpur Wares, red/grey ware and polished stone tools and the burial custom indicate that the people had contacts with the people from Malwa, Saurashtra and s. India.

The ^{14}C dates for layer 2 at Chandoli are 1330 ± 70 B.C. and 1300 ± 70 B.C. (Pennsylvania laboratory) and are not far removed from Phase IV at NAVDATOLI the date of which is 1440 ± 130 B.C.

Deo, S.B., & Ansari, Z.D., 1965, *Chalcolithic Chandoli*, Poona.—Z.D. ANSARI

Chandpur¹, Dt Bulandshahr. OCW [11.5], PGW, [11.14] and red ware of the Śuṅga-Kushan period.

IAR 1970-1.

Chandpur², Dt Gorakhpur. Black-and-red ware [11.6.3].

IAR 1963-4.

Chandpur³, (31°1'; 76°38'), Dt Rupnagar. PGW [11.14] site.

AI, 10 & 11, 1954 & 1955, p. 139.

Chandragupta-Patna, Dt Mahbubnagar. Brick structures of the early historical Pd [4.18.10].

IAR 1972-3.

Chandraketugarh, (22°41'; 88°42'), Dt 24 Parganas, 35 km n.-e. of Calcutta, covering an area of 3 sq km of rolling mounds and a *garh*, ruined fort, with rampart walls, enclosed in the villages of BERACHAMPA, Deolia, Hadipur, Shampur, Jhikra, etc. The site is enormously rich in surface finds. In 1907 A.L. Longhurst visited

Berachampa and recovered early historical pottery and bricks (cf. *ASI-AR 1922-3*, p. 109), R.D. Banerji explored it in 1909 and noticed footed querns [6.19], mother goddess figurines [12.6] and the fragment of a highly polished pillar. He also listed silver and copper vessels, a seal, terracotta spindle whorls [6.25], etc. (Banerji, 1911, 1923). The explorer Kalidas Datta realized the importance of the site and induced the Asutosh Museum to excavate it.

From the surface finds and the nature of the ruins it is clear that Chandraketurgarh represents an early historical urban settlement [4.18.15] continuing down to later times. Terracotta figurines of exquisite beauty, toy carts drawn by various animals, some perhaps representing the vehicles of deities, plaques depicting Jataka and *Pancatantra* stories, hoards of silver punch-marked coins [3.1] and Kushan and Gupta coins, early historical seals and sealings [3.2], some with undeciphered legends, beads and other antiquities have enriched the galleries of the Indian Museum, Asutosh Museum, Museum and Art Gallery of the W. Bengal Directorate of Arch., Burdwan Univ. Museum, etc.

The Asutosh Museum of the Univ. of Calcutta, under K.G. Goswami and later on under C.R. Roychaudhuri, with the general guidance of D.P. Ghosh, conducted excavation here from 1956-7 to 1967-8. The excavation has revealed a continuous sequence from pre-Maurya to Pala times, divided into six Pds. Pd I, pre-Mauryan, has a red-slipped ware and ivory beads; the discovery of the PGW [11.14] has been claimed (but this is very doubtful). Pd II, Maurya-Sunga, has the NBPW [11.16], Black-slipped Ware [11.13] and polished and unpolished grey wares. Perhaps belonging to this Pd is a pottery drain in the *garh* mound, associated with a number of black-ware cups having a circular flat base and open mouth with an incurved rim and small spout near the shoulder. The Pd has also yielded beads of semiprecious stones, copper antimony rods [18.1], terracotta figurines and copper punch-marked coins. Pd III, probably late Sunga, has stamped red ware, some inscribed with Brahmi letters, Sunga terracottas, steatite caskets and cast copper coins [3.1]. Pd IV has typical Kushan terracotta figurines and plaques.

These early Pds show signs of houses built of wood, bamboo and tiles with mud walls on mud plinths. The foundations seem to have been strengthened by wooden piles. Baked bricks come into use in Pd V (Gupta), which has grey or black pottery sometimes bearing stamped designs, terracotta plaques with human and animal figurines and *mithunas*.

In the mound of Khana-Mihirer-Dhipi has been excavated a stupendous brick temple complex facing n. and measuring 19-20 sq m, with 4-26 m long projections on three sides and a vestibule 13-72 square attached to

the main temple on the n. A deep pit, 3-52 m sq and 7-16 m deep, lined with rubbed bricks with obliquely decreasing sides, and a paved floor, 86 cm sq, at the bottom, has been encountered in the excavation. Although the excavators claim a Gupta date for the temple, Saraswati, 1976, on the basis of the plan, architecture and developed form of the plinth mouldings, would ascribe it to the Pala period.

The excavation has also revealed the remains of two votive *stupas* and other structures, together with the stray find of a red sandstone Buddha image from Khana-Mihirer-Dhipi and plaques with Buddha and Jataka stories which associate the site with Buddhism.

Banerji, R.D., 1911, *Descriptive List of Sculptures & Coins in the Bangiya Sahitya Parishad*, Calcutta; 1923, *Banglar Itihasa* (in Bengali), Calcutta, 1, p. 33. Chakrabarti, D.K., 1966, in *Proc. Indian Hist. Congress*, Mysore; 1977, in *Jour. Numismatic Soc. India*, 39. Das Gupta, P.C., 1956, in *Modern Review*, 99, 4; 1959, in *Lalit Kala*, 6; 1960, in *Jour. Dept of Letters, Calcutta Univ.*, New Series, 3; 1979, in *Bharat Pratibha*, 6, international no. Datta, B.K., 1948, in *Modern Review*, 34. Ghosh, D.P., 1968, *Studies in Museum & Museology in India*, Calcutta, pp. 44-52; 1973, in Mode, H., ed., *Great Centres of Art—Calcutta*, Leipzig. Goswami, K.G., 1966, in *Indian Museum Bulletin*, 2. IAR 1955-6, p. 61, 71; 1956-7, p. 29, 73, 81; 1957-8, p. 51, 70, 72; 1958-9, pp. 55, 77; 1959-60, pp. 50, 77; 1960-1, pp. 39, 68, 70; 1961-2, pp. 63, 106; 1962-3, pp. 46, 74; 1963-4, p. 63, 94; 1964-5, pp. 53, 79; 1965-6, pp. 59, 96; 1966-7, p. 40, 76; 1967-8, p. 50, 74; 1968-9, p. 77. Maite, D.K., ed., 1972, *Garh Chandraketur Katha* (in Bengali). Saraswati, S.K., 1976, *Architecture of Bengal*, 1. Ancient Phase, pp. 92-3.—D.K. CHAKRABARTI

Chandraprabha Valley, Dt Varanasi. A few Lower Palaeolithic tools [4.2] including scrapers and flakes fashioned on quartzite were collected from the bed of the Bhainsahawa Nala, a tributary of the Chandraprabha, at the foot-hills of the HATHINIA PAHAR near Hetimpur village. Microliths [4.5] consisting of cores, flakes, parallel-sided blades, blunted-back blades, lunates, scrapers, points, borers, triangles and trapezes were found at BAIRADUMUHAWAN, KAPISHA, SONA-BARSA, PANCHPEDIA, MORADABAD, RAJA BABA-KI PAHARI, BHAINSAHAWA, HATHINIA and KUSUMBHAR. Barring HATHINIA all the sites had non-geometric tools, fashioned mainly on cherty material.

Rock-shelters with paintings were also reported, the motifs consisting of animals, human figurines, floral designs and geometric patterns. Neither potsherds nor microliths were obtained from these rock-shelters.

Megalithic monuments [4.17.3]—cairn circles, cists and cists within cairns—were located around the HATHINIA and BHADAHAWAN hillocks in the Chandraprabha valley. KAKORIA, the habitational area of the Megalithic people, lies immediately to the n.-w. of the Megalithic cemetery of the Hathinia hillocks. Cairn circles appear to have been a popular burial type as contrasted to cists. Besides the cists are smaller in size in comparison to their counterparts of the Deccan and s. India. Of the burial goods mention may be made of

pottery, microliths, gold bangles, terracotta beads and skeletal remains. The ceramic assemblage included the black-and-red ware, [11.15.1], black-slipped and the ordinary red wares. No painted sherd was found.

Microliths fashioned on chert consisted of lunates, blades, blunted backs, scrapers and a serrated blade. No tool or weapon made of bone or metal was found in any grave.

Sites like RAMANA-KI-TANDI, DHOLAKIA, LALBEDIA, PEMA RAGHUNATHPUR, BHIKHAMPUR, BAI-RADUMUHAN, KAKORIA, KUNDA HIMAIYA, BHAINSAHAWA and HETIMPUR yielded cores, flakes and finished tools consisting of parallel-sided blades, blunted backs, points, etc., fashioned primarily on chalcedony. The preponderance of the blade element, the employment of the crested-ridge technique [16.15.2] and the selection of chalcedony as raw material give an individuality to the tools.

Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad, pp. 78-88.

Chandravalli, Dt Chitradurga, lying in a triangular valley of the same name formed by three hills, the Chitradurga, the Kirabanakallu and the Chologudda, with two water-courses, old and new, running through the site in a n.-s. direction. In extent the site measures approximately 730×730 sq m. Surface finds, viz. a coin of Kṛṣṇarāja III of Mysore, a copper coin of Kṛṣṇadeva Rāya of the Vijayanagara empire, potin coins of the Sātavāhana dynasty, Roman denarii, pottery of the Megalithic culture [11.15.3], the Russet-coated Painted Ware [11.22] and a few neoliths [4.6.9] from the water-courses and caves, indicate that the site was in occupation from the Iron Age down to recent times. Besides temples and inscriptions of the Cālukyas and Hoysālas are found in the hillocks. An important inscription is that of the Kadamba king Mayūrasarman in box-headed characters.

The site was excavated three times, the first two being by L. Narasimhachar and M.H. Krishna of the Mysore Arch. Dept and Mysore Univ. and the last by the ASI under Wheeler in 1947. Two Pds, the Megalithic [4.17.8] and the Āndhra-Sātavāhana, were noticed.

The lower levels of the Pd I yielded the Black-and-red Ware [11.15] of greyish-buff fabric, turned on slow wheel with a burnished surface and possibly salt-glazed, besides the red and black wares. The finish of the pottery is inferior to that of BRAHMAGIRI. Graffito marks are not found. The decorations comprise incised herring-bones, zigzags and oblique notches around the shoulder. The shapes are varieties of the bowl, shallow carinated dish, basin, funnel-shaped lid, vase and jar, the last in red ware being possibly handmade. The shapes common to BRAHMAGIRI and Chandravalli are the funnel-shaped lid in black ware, ledged bowl with incurved rim

and rounded base and carinated bowl, all in the Black-and-red Ware, and three-legged vessel in dull-red ware.

Pd II represents an intruding Sātavāhana culture overlapping with the Megalithic. This is recognized by the occurrence of the typical Russet-coated Painted Ware, the commonest types being the straight-sided bowl and the one with beaked rim. The paintings in lime or kaolin coated with a russet-coloured slip are mostly geometric and linear consisting of criss-cross, radiating lines ending in pellets, dotted lines, hatched triangles, etc. Along with this ware are also found: a fine reddish-buff ware made on fast wheel with smooth fine red slip; coarse dull-red ware, also wheel-turned, mostly without polish or slip but not without exceptions; and sparse black and grey wares. The larger vessels in red ware are handmade. At a later level the Rouletted Ware [11.21] occurs though in the earlier levels dish forms akin to those in the Rouletted Ware are found. The forms in these wares are the conical open-mouthed vessel with disc bases, shallow dish with flanged waist, spout and handle.

Wheeler's excavation did not tackle any megalith, nor did it encounter any structural remains. But during 1928-29 Krishna had laid as many as 40 trenches and exposed Megalithic cists [4.17] as well, which had neither the bounding circles nor the buttressing found at BRAHMAGIRI. Chronologically they are earlier than the Sātavāhana period and also overlap with it. No painted pottery was recovered from them. In one cist a skeleton in a flexed position was noticed. Some of the pots contained teeth and bones of animals. Interesting is the find of what appears to be the legs of sarcophagus [12.9] from one of the cists.

The structural vestiges brought to light are: (1) a covered stone drain running e.-w. to an available length of 21 m leading to a brick-built cistern on the w. and connected with it by a pottery pipe, assigned to the early Sātavāhana times; (2) red-gravel rammed floors at various levels of the Sātavāhana period; (3) brick-built fireplace, early Sātavāhana; (4) walls of bricks, mostly of the size of 40 × 18 × 7.5 cm, set in red mud mortar; (5) a house complex built of bricks, 45.7 × 22.8 × 9.2 cm, laid in English bond, the thickness of the wall being 45.7 cm; (6) a room with an entrance opening in bricks, size 40 × 20 × 7.5 cm, rising to a height of 74 cm; and (7) a floor of large-sized bricks.

The other objects recovered from the excavation are beads of semiprecious stones, coral, etc., copper and iron objects and a few neoliths. The coins include those of the Sātavāhanas, viz. those of Mahārāṣṭri Sadakāṇa Kalalyā, Gautamiputra Viṣṇuvākyura, Muḍānanda, Cuṭukulānanda, Yajñaśrī Sātakarni and Vāsiṣṭhiputra Pulumāyi, Augustus Caesar, Hoysāla Virārāya (silver), Kṛṣṇadeva Rāya and Kṛṣṇarāja III of Mysore, besides a silver punch-marked coin [3.1] and a Roman bulla [6.4].

- Krishna, M.H., 1931, *Excavation at Chandravalli, Supplement to AR Mysore Arch. Dept for the year 1929*, Bangalore. Wheeler, R.E.M., 1947-8, in *AI*, 4, pp. 180-310.—K.S. RAMACHANDRAN
- Chandravati**, Dt Varanasi. NBPW [11.16] site.
IAR 1961-2.
- Chandrawara¹**, Dt Hamirpur. Pointed-butt polished stone axes [4.6].
Brown, C., 1917, *Catalogue of Prehistoric Antiquities in the Indian Museum at Calcutta*, Simla.
- Chandrawara²**, Dt Jamnagar. Red Polished Ware [11.23] site.
IAR 1957-8.
- Chandreha**, Dt Sidhi. Tools of the Early and Middle Stone (Lower and Middle Palaeolithic [4.2-3]). Ages.
IAR 1961-2.
- Chandsai**, Dt Santhal Parganas. Two shouldered celts of copper [4.11] were found.
Patna Museum collection.
- Chandu-Budhera Khera**, Dt Gurgaon. PGW [11.14] and early historical site.
Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.
- Chandupura**, Dt Gwalior. Early historical site yielding the black-and-red ware [11.6] and the NBPW [11.16].
IAR 1971-2.
- Chanduru**, Dt Guntur. Early historical [4.18.10] site.
Rea, A., 1894, *ASI New Imperial Series*, Madras, 16.
- Chanegaon**, Dt Bijapur. Tools of Series II (Middle Palaeolithic [4.3]) including scrapers, points, etc., mostly of jasper were found. It is also a Chalcolithic habitation [4.14.8] site rich in microlithic blades along with fluted cores, the Jorwe Ware [11.11] and grey ware similar to that from BRAHMAGIRI.
IAR 1958-9.
- Chanehvel**, Dt Bharuch. Early historical site.
IAR 1965-6.
- Chanera**, Dt E. Nimar. Palaeoliths [4.2-4] and microliths [4.5].
IAR 1959-60.
- Chang**, Dt Bhiwani. Pre-Harappa [4.8] and late Harappa [4.10] site. See YAMUNA RIVER.
Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sulej-Yamuna Divide*, Kurukshetra, p. 125.
- Changda**, Dt Kaira. Harappa [4.9] site.
IAR 1972-3.
- Changdev**, Dt Jalgaon. Early, Middle and Late Stone Age (Lower and Middle Palaeolithic [4.2, 3] and Mesolithic [4.5]) tools.
IAR 1965-6; 1969-70.
- Chankalia**, Dt Panch Mahals. Microlithic [4.5] site.
Sonawane, V.H., 1976, in *Arch. Congress & Seminar*, 1972, Kurukshetra.
- Chankatha-Gaura**, Dt Allahabad. Neolithic celts [4.6.3].
IAR 1969-70.
- Chankigarh**, Dt W. Champaran. Mound yielding bricks resembling those found at Mauryan sites.
ASI—AR, 16, pp. 109-10; 22, pp. 50-1. ASI—AR, Bengal Circle, 1902, p. 7.
- Chanmanwa**, Dt Mirzapur. Rock-shelter with paintings [13].
Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad, p. 55.
- Channapur**, Dt Dharwar. Palaeoliths of the Acheulian type [4.2].
IAR 1959-60.
- Channur**, Dt Dharwar. Neolithic tools, probably of the Chalcolithic [4.14.8] complex.
IAR 1958-9.
- Chanpur**, Dt Gorakhpur. Historical black-and-red ware.
IAR 1963-4.
- Chapna**, Dt Jabalpur. Middle Palaeolithic [4.4] site.
IAR 1968-9.
- Chara**, Dt Junagadh. Polished Ware [11.23].
IAR 1957-8.
- Charai** (17°29'; 73°28'), Dt Kolaba. The site situated 16 km s.-s.-e. of Mahad on the Savitri river yielded several microlithic cores and flakes and blades on chalcedony, etc., in the shallow gullies cut in red gravelly clay resting on the pebble bed. The left bank terrace yielded two unifacial choppers [4.2].
Joshi, R.V., & Bopardikar, B.P., 1972, in *Arch. Congress & Seminar*, Nagpur.
- Charan** (31°3'; 76°14'), Dt Jullundur, PGW [11.14] and NBPW [11.16] site.
AI, 10 & 11, 1954 & 1955, pp. 139, 141.
- Charanio**, (21°55'; 71°32'), Dt Bhavnagar. Late Harappa [4.10] site corresponding to RANGPUR II B and II C.
AI, 18 & 19, 1962 & 1963, p. 205. IAR 1960-1.
- Charatgarh**, Dt Una. A PGW [11.14] sherd, early historical pottery and copper coins were found.
IAR 1970-1.
- Chargaon**, Dt Bhandara. Series II (Middle Palaeolithic [4.3]) tools.
IAR 1959-60.
- Chari**, Dt Kolaba. Lower Palaeolithic [4.2] and Mesolithic [4.5] site.
Joshi, R.V., & Bopardikar, B.P., 1972, in *Arch. Congress & Seminar*, Nagpur.
- Charkahawa**, Dt Mirzapur. Middle Stone Age (Middle Palaeolithic [4.3]) site.
IAR 1970-1.
- Charkalgram**, Dt Birbhum. Black-and-red Ware [11.6.5] site.
IAR 1971-2.
- Charkhardi**, Dt Rajkot. Red Polished Ware [11.23].
IAR 1957-8.
- Charode**, Dt Kozhikode. Megalithic circular rock-cut cave [4.17.10] yielding bowls and dishes of the Black-and-red Ware [11.15.3] and rusted iron implements.
IAR 1969-70.
- Charpalli**, Dt Chandrapur. Early Stone Age (Lower Palaeolithic [4.2]) tools.
IAR 1961-2.

- Chashiana**, Dt Surendranagar. Harappa [4.9] site within a radius of 5-7 km from RANGPUR.
IAR 1954-5.
- Chatiaolia (Chihani)**, Dt Rohtak. Grey ware and early historical site.
Jour. Haryana Studies, 3, 1, p. 6.
- Chatla**, Dt Midnapur. Shouldered celt of copper found in 1965 [4.11].
Calcutta Review, Sept. 1971, p. 144. Das Gupta, P.C., 1966, *Exploring Bengal's Past*, Calcutta. *IAR 1965-6.*
- Chattawada**, Dt Bharuch. Middle and Late Stone Age (Middle Palaeolithic [4.3] and Mesolithic [4.5]) site.
IAR 1969-70.
- Chaubra**, Dt Mathura. A flat celt and harpoons, all of copper [4.11].
ASI-AR, 3, p. 16. *Proc. Soc. Antiquities Scotland*, 1870.
- Chaudiahdanapura, Chaudadanpur**, Dt Dharwar. Neolithic [4.6.9], Megalithic [4.17.8] and early historical [4.18.11] site.
IAR 1966-7. Jour. Asiatic Soc. Bombay, 38, pp. 154-64. *Jour. Karnataka Univ.*, 4, pp. 183-200.
- Chauharjan**, Dt Pratapgarh. Site on the right bank of the Sai yielding NBPW [11.16] and associated wares.
IAR 1968-9.
- Chaurai Kalan**, Dt Jabalpur. Series II (Middle Palaeolithic [4.3]) tools.
IAR 1958-9.
- Chaurai Khurd**, Dt Jabalpur. Series II (Middle Palaeolithic [4.3]) tools.
IAR 1958-9.
- Chaurath**, Dt Gurdaspur. Early historical remains. See ACHAL-SAHEB.
IAR 1961-2.
- Chauthi-ka-Kot**, Dt Ghazipur. NBPW [11.16].
IAR 1963-4.
- Chavaneshwar**, Dt Bharuch. Late Harappa [4.10] and early historical site near Manar.
IAR 1967-8.
- Chavaneshwara**, Dt Vadodara. Early and late historical site.
IAR 1966-7.
- Chavayur**, Dt Kozhikode. Mesolithic [4.5] site yielding microlithic tools on quartz. Megalithic rock-cut caves [4.17.10] were also found, one of them having an eight-legged sacrophagus [12.9].
ASI-AR 1911-2, pp. 59-60.
- Chavodia**, Dt Panch Mahals. Mesolithic [4.5] site.
IAR 1972-3.
- Chawar-ka-Kot**, Dt Ghazipur. Black-and-red Ware [11.6.3].
IAR 1963-4.
- Cháwdhridih**, Dt Santal Parganas. Microliths [4.5].
IAR 1963-4.
- Chawinda**, Dt Amritsar. Black-slipped [11.13] Ware and black-and-red and grey wares.
IAR 1963-4.
- Chaya**, Dt Junagadh. Red Polished Ware [11.23].
IAR 1957-8.
- Chebrolu**, Dt Guntur. A 9 m high mound, 11 km s.-e. of Guntur, yielded the Rouletted Ware [11.21], NBPW [11.16], Black-and-red Ware [11.15.3] and Black-slipped Ware [11.13] besides Neolithic tools [4.6.8].
IAR 1960-1.
- Cheengeri-Desom**, Dt Kozhikode. Cists and stone circles [4.17.10].
IAR 1960-1.
- Chehnur**. See DON RIVER.
- Chejerla**, Dt Guntur. Early Stone Age (Lower Palaeolithic [4.2]) tools and Rouletted Ware [11.21].
IAR 1961-2.
- Chelapur**, Dt Bijapur. Megalithic burials [4.17.8].
IAR 1965-6.
- Chella**, Dt Bankura. Microliths and flakes [4.5].
IAR 1961-2.
- Chellapadu**. See SRISAILAM.
- Chellapillaiyarkuppam**, Dt Chingleput. Megalithic [4.17.9] site.
AI, 22, 1966, p. 27.
- Chellipad**, Dt Mahbubnagar. Megalithic site [4.17.7] with cairn circles.
IAR 1966-7.
- Chendagutu**, Dt Ranchi. Chisel of schist [4.6.4].
Jour. Bihar & Orissa Res. Soc., 2, 1916, p. 68.
- Chenegutu**, Dt Ranchi. Chisel of schist, a broken broad-bladed axe of schist, a rectangular polished chisel of basalt and other chisels [4.6.4].
Jour. Bihar & Orissa Res. Soc., 2, 1916, p. 67.
- Chengamend**, Dt Ernakulam. Extensive urn burial [4.17.10] site.
IAR 1963-4.
- Chengavadi**, Dt Mysore. Megalithic cist burials [4.17.8].
IAR 1961-2.
- Chennampatti**, Dt Madurai. Microlithic [4.5] site. Urn burials [4.17.9] were also found.
IAR 1960-1.
- Chennapattana**, Dt Bangalore. Megalithic site with cists and stone circles [4.17.8].
 Seshadri, M., 1956, *Stone-using Cultures of Pre- & Proto-historic Mysore*, London, p. 60.
- Chepalamadugu**, Dt Kurnool. Site on the Duvvali yielding Series I and II (Lower and Middle Palaeolithic [4.2-3]) tools.
IAR 1959-60.
- Cheramangad**, Dt Trichur. Megalithic [4.17.10] site. Excavation of an umbrella stone yielded evidence of a jar-burial.
AR Travancore-Cochin State, 1952-3.
- Cherambadi**, Dt Nilgiri. Megalithic [4.17.9] site.
 Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras, p. 225.
- Cherand**, Dt Saran. NBPW [11.16]. (Same as

CHIRAND?)

IAI 1958-9.

Cherapunji, Dt Shillong. A large number of megaliths [4.17.5] especially menhirs were found. It is difficult to ascertain the date of these structures since the local Khasi people still practise a similar custom.

IAI 1971-2.

Cherode, Dt Kozhikode. Rock-cut caves, possibly Megalithic [4.17.10].

IAI 1960-1.

Cherunthazham, Dt Cannanore. Umbrella-stones [4.17.10].

IAI 1960-1.

Chetnepalli, Dt Kurnool. Neolithic [4.6.8] site.

IAI 1964-5.

Chettipalaiyam, Dt Coimbatore. A Megalithic [4.17.9] monument in the form of a rectangular chamber was unearthed at the mound. Other objects consisted of potsherds and copper bowls.

ASI-AR 1930-4.

Chevalla, Dt Medak. Microlithic [4.5] site.

IAI 1963-4.

Chevanbhavi, Dt Bijapur. Microliths [4.5].

IAI 1961-2.

Chewra, Dt Singbhum. Microliths [4.5].

IAI 1963-4.

Chhachundra river, Dt Gwalior. About 200 m upwards from the Makora bridge on the Gwalior-Tekanpur road some scrapers and handaxes [4.2] were noticed in the river section. Just adjacent to the bridge was located mound locally known as Banjaron-ka-Tila which yielded sherds of the black-and-red ware and of the Malwa Ware [11.10].

IAI 1968-9.

Chhadvel, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) tools. Chalcolithic burial [4.14.6] remains were also found.

IAI 1961-2.

Chhajja (31°7'; 76°33'), Dt Hoshiarpur. PGW [11.14] site.

AI, 10 & 11, 1954 & 1955, p. 139.

Chhajpura, Dt Saharanpur. Harappa [4.9] and OCW [4.12] site.

IAI 1966-7.

Chhajpur Khera, Dt Gurgaon. PGW [11.14] and early historical site.

Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.

Chhan, Dt Sagar. Palaeoliths [4.2, 3] were found in the valley of the Billa, a tributary of the Dhasan.

IAI 1960-1; 1963-4.

Chhapara, Dt Seoni. Tools of Series II (Middle Palaeolithic [4.3]). See ALONIA.

IAI 1959-60.

Chhaparheri, Dt Saharanpur. Harappa [4.9] and OCW [4.12] site.

IAI 1966-7.

Chhapava, Dt Basti. Microliths (of unspecified affiliation).

IAI 1963-4.

Chhapra, Dt Rohtak. Site yielding Harappa [11.3] and late Harappa Wares [11.4], PGW [11.14], Black-slipped Ware [11.13] and early historical wares.

Jour. Haryana Studies, 3, 1, p. 3.

Chhaprauli, Dt Meerut. PGW [11.14] and NBPW [11.16] site on the left bank of the Yamuna.

Sharma, R.P., 1976, in Arch. Congress & Seminar, 1972, Kurukshetra.

Chhat, Dt Patiala. PGW [11.14] represented the earliest occupation at the mound and was followed by NBPW [11.16] occurring higher up.

AI, 10 & 11, 1954 & 1955, pp. 139, 144.

Chhata, Dt Mathura. PGW [11.14].

IAI 1955-6.

Chhatarpalia, Dt Allahabad. Painted rock-shelter [13] and Early Stone Age (Lower Palaeolithic [4.2]) site in the BELAN VALLEY.

IAI 1970-1. Misra, V.D., 1977, Some Aspects of Indian Arch., Allahabad, pp. 37, 55.

Chhattri Khera, Dt Chittaurgarh. Black-and-red Ware. See KADUKOTA.

IAI 1957-8.

Chhavdi, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAI 1964-5.

Chhayasa, Dt Gurgaon. PGW [11.14] and early historical site.

Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.

Chhichhariwal, Dt Amritsar. PGW [11.14] site.

IAI 1966-7.

Chhidgaon, Dt Hoshangabad. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2-3]) tools.

IAI 1961-2.

Chhindwara, Dt Chhindwara. Rich microlithic [4.5] site in the fields opposite the building of the Tribal Research Institute.

IAI 1959-60.

Chhirpani, Dt Jabalpur. Series II (Middle Palaeolithic [4.3]).

IAI 1958-9.

Chhita Khudri, Dt Jabalpur. Microliths consisting of blades, crescents, scrapers and cores [4.5].

IAI 1958-9.

Chhitampur, Dt Mirzapur. Cairn circles and dolmenoid cists [4.17.3].

IAI 1962-3.

Chhota Belma, Dt Jhansi. NBPW [11.16] found at Chhota Belma, 9 km from Moth on the Moth-Samthar road, together with large-sized bricks with finger marks.

IAI 1955-6.

Chhota Nunyani, Dt Purulia. Microliths [4.5].

IAI 1959-60.

Chhoti Suraj Bera hill, Dt Santal Parganas. Tools of Series II (Middle Palaeolithic [4.3]) were found at the foot of the hill, 80 km e. of Dumka.

IAR 1960-1.

Chuhia, Dt Mirzapur. Middle Stone Age (Middle Palaeolithic [4.3]) site. (Same as following?)

IAR 1970-1.

Chuhis, Dt Mirzapur. Upper Palaeolithic [4.4] site yielding blades, points, scrapers and burins. (Same as preceding?)

IAR 1970-1.

Chiadah, Chiada, Dt Bankura. Tools of Series I (Lower Palaeolithic [4.2], a large number of microliths [4.5], three neoliths [4.6.4] and five Puri-Kushan coins [3.1] were found.

IAR 1957-8; 1959-60; 1965-6.

Chibbar-nala, Dt Mandsaur. In the vicinity of Hinglagadh fort near Bhanpura rock-shelters [13] were found with paintings assigned to different periods on stylistic grounds. Microliths [4.5] comprising long blades, lunates and fluted cores of agate and chalcedony were also encountered in the shelter.

IAR 1957-8.

Chibragiri, Dt Garo Hills. Early Stone Age (Lower Palaeolithic [4.2]) site on the right bank of the river Rongram.

IAR 1971-2.

Chichghat, Dt Chandrapur. Palaeolithic (of unspecified nature) site.

IAR 1960-1.

Chicholi, Dt Nagpur. Megalithic site with stone circles [4.17.6].

IAR 1970-1.

Chichondi Patil, Dt Ahmadnagar. Microliths [4.5] comprising nicely retouched blades and fluted cores of chalcedony were collected from the river-bed.

IAR 1957-8.

Chichapalli, Dt Chandrapur. Palaeolithic [4.2-4] site.

IAR 1959-60.

Chidora. See ORIYO.

Chikalda, Dt Khargone. Site yielding Kayatha Ware [11.7].

Wakankar, V.S., 1976, in *Arch. Congress & Seminar, 1972*, Kurukshetra.

Chikali, Dt Bharuch. Middle Stone Age (Middle Palaeolithic [4.3]) and Mesolithic [4.5] site.

IAR 1969-70.

Chikallapur, Dt Bijapur. Coarse red-slipped ware, Russet-coated Painted Ware [11.22] and Red Polished Ware [11.23].

IAR 1958-9.

Chikalthan, Dt Ahmadnagar. Tools of Series II (Middle Palaeolithic [4.3]) and microliths [4.5].

IAR 1960-1.

Chikanhalli, Dt Gulbarga. Megalithic [4.17.8] site. Some stone circles have a non-functional symbolic pas-

sage in the cairn packing. The pottery is unusual in type.

Jour. Geological Survey of Hyderabad, 4, 1, p. 157, 1941. *Megalithic Tombs & other Remains in the Deccan*, Hyderabad, p. 57, pp. 29-52. Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 57-61.

Chikhali, Dt Ahmadnagar. Tools of Series I and II (Lower and Middle Palaeolithic [4.2,3]).

IAR 1955-6.

Chik Hesur, Dt Raichur. Prehistoric site (of unspecified nature).

AR Hyderabad Dept of Arch., 1936-7, p. 2.

Chikjala, Dt Bangalore. Megalithic site with port-holed cists [4.17.8]. (Same as CHIKKAJALA?)

Seshadri, M., 1956, *Stone-using Cultures of Pre & Proto-historic Mysore*, London, p. 61.

Chikka Benkal, Dt Raichur. Megalithic [4.17.8] site. The surface indications of many of them have been erased by cultivation.

Allchin, F.R., 1963, *Neolithic Cattle-keepers of s. India*, Cambridge, p. 58.

Chikkahundi, Dt Mysore. Megalithic burials of cairn and cist types [4.17.8].

IAR 1963-4.

Chikka-Iggalur, Dt Kolar. Megalithic site with stone circles [4.17.8].

IAR 1972-3.

Chikkailur, Dt Mysore. Megalithic [4.17.8] site.

Information from C. Krishnamurthy through A. Sundara.

Chikkajala, Dt Bangalore. Cist-circle. (Same as CHIKJALA?)

AI, 4, 1947-8, p. 307.

Chikka-kuntur, Dt Kolar. Megalithic [4.17.8] site with stone circles.

IAR 1971-2; 1972-3.

Chikkamadure, Dt Chitradurga. Megalithic [4.17.8] and early historical site.

IAR 1957-8.

Chikkamalapura, Dt Mysore. Black-and-red [11.15.3] and Russet-coated Painted Wares [11.22] and Megalithic cist burials [4.17.8].

IAR 1961-2.

Chikkarasampalayam, Dt Coimbatore. Port-holed cists [4.17.9].

IAR 1962-3.

Chikkarayapuram, Dt Chingleput. Megalithic [4.17.9] site.

AI, 22, 1966, p. 29.

Chikla. See SHIVNA VALLEY.

Chiklada, Dt Surat. Early, Middle and Late Stone Age (Lower [4.2] and Middle Palaeolithic [4.3] and Mesolithic [4.5]) site.

IAR 1967-8.

Chikli, Dt Bharuch. Middle and Late Stone Age (Middle and Upper Palaeolithic [4.2,3]) and Mesolithic [4.5] site.

IAR 1969-70.

Chikli, Dt Chandrapur. Palaeolithic (of unspecified nature) site.

IAR 1960-1.

Chiklod, Dt Raisen. Painted rock-shelters [13] and palaeoliths.

Prachya Pratibha, 3, 2 July 1975.

Chik-Madhure, Dt Chikmagalur. Megalithic [4.17.8] site.

Seshadri, M., 1960, *Report on the Jadigenehalli Megalithic Excavations*, Bangalore, p. 4.

Chikmagnur, Dt Dharwar. Early historical [4.18.11] site. See ANVERI.

IAR 1959-60.

Chikmannur, Dt Bijapur. Chalcolithic [4.14.8] habitation site rich in microlithic blades along with fluted cores, the Jorwe Ware [11.11] and grey ware similar to that from BRAHMAGIRI. The site also had four Megalithic stone circles [4.17.8].

IAR 1958-9.

Chikrampur, Dt Raichur. Rock-shelter [13] with paintings. A Chalcolithic [4.14.8] site was located in front of the rock-shelter yielding neolithic implements and coarse-textured grey ware similar to that from MASKI, besides a few red-slipped coarse micaceous ware sherds.

IAR 1961-2.

Chiksana, Dt Bharatpur. Historical site 18 km e. of Bharatpur.

IAR 1966-7.

Chikse, Dt Dhule. Microliths [4.14.6] and sometimes neoliths [4.6] were found in association with the black-on-red painted pottery and coarse grey ware, similar to that from the Chalcolithic levels at BRAHMAGIRI and BAHAL. The site also contained remains of burials with which were associated pots of the Black-and-red Ware [11.15.3] bearing graffiti [20.1].

IAR 1957-8.

Chilakalagadda, Dt Visakhapatnam. Mesolithic [4.5] site.

Jour. Andhra Hist. Res. Soc., 35, pp. 323-6.

Chilakapadu. See BOGGERU VALLEY.

Chilamakuru, Dt Cuddapah. Stone mace-head and sherds of black-painted red ware [4.14.7] as also Megalithic Black-and-red Ware [11.15.3].

IAR 1962-3.

Chilapur, Dt Bijapur. Megalithic site with cairn circles [4.17.8].

Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, p. 227.

Chilehra, Dt Saharanpur. Harappa [4.9] and OCV [4.12] site.

IAR 1966-7.

Chilkigarh, Dt Midnapur. Microliths and flakes [4.5].

IAR 1961-2.

Chillakuru, Dt Chittoor. Lower [4.2] and Middle Palaeolithic [4.3] site.

IAR 1968-9.

Chimarheri, Dt Kurukshetra. Pre-Harappa [4.8] and late Harappa [4.10] site.

Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 135.

Chimnad, Dt Bijapur. Chalcolithic [4.14.8] site.

IAR 1965-6. P.B. Desai *Felicitations Vol.*, Dharwar, 1971, pp. 4-30.

Chimmalgi, Dt Bijapur. Early historical [4.18.11] site characterized by red-slipped ware, Black-and red Ware and Russet-coated Painted Ware [11.22].

IAR 1972-3. *Progress Report Kannada Res. Inst.*, 1941-6, p. 17.

Chimun, Dt Hissar. Pre-Harappa [4.8] and Harappa [4.9] site.

IAR 1966-7. Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 123.

Chimur, Dt Chandrapur. Microlithic [4.5] site.

IAR 1959-60.

Chinatarampalle, Dt Cuddapah. Early, Middle and Late Stone Age (Lower and Middle Palaeolithic [4.2, 3] and Mesolithic [4.5] tools.

IAR 1964-5.

Chinchahalli, Dt Mysore. Megalithic cist burials [4.17.8].

IAR 1961-2.

Chinchala, Dt Chandrapur. Late Stone Age (Mesolithic [4.5]) site.

IAR 1967-8.

Chinchamadlehalli, Dt Kolar. Megalithic site with stone circles [4.17.8].

Information from C. Krishnamurthy through A. Sundara.

Chinchani, Dt Pune. Tools of Series II (Middle Palaeolithic [4.3]) on the GHOD. (Same as CHINCHINI?)

IAR 1955-6.

Chinchban, Dt Ahmadnagar. Mesolithic [4.5] site.

IAR 1960-1.

Chinchgundi, Dt Chandrapur. Early Stone Age (Lower Palaeolithic [4.2] tools.

IAR 1961-2.

Chinchkede, Dt Dhule. Chalcolithic [4.14.6] site.

IAR 1963-4.

Chinchkhandi (16°16'; 75°17'). Dt Bijapur. Lower and Middle Palaeolithic site. See GHATAPRABHA VALLEY.

Chinchli, Dt Surat. Lower [4.2] and Middle Palaeolithic [4.3] and Mesolithic [4.5] site.

IAR 1967-8.

Chinchner, Dt Satara. Middle Stone Age (Middle Palaeolithic [4.3] and Mesolithic [4.5]) tools.

IAR 1962-3.

Chinchni. See GHOD VALLEY. (Same as CHINCHANI?)

Chinchoda, Dt Dhule. Microliths and sometimes neoliths were found in association with black-on-red painted pottery [4.14.6]. A coarse grey ware similar to that from the Chalcolithic levels at BRAHMAGIRI and BAHAL was also found. The site contained the remains of burials with which were associated pots of the Black-and-red Ware [11.15.3] bearing graffiti [20.1]. The

Chalcolithic culture was superimposed successively by cultures with the typical Black-and-red Ware and a coarse red-slipped ware, the latter being assignable to the Sātavāhana period.

IAR 1957-8.

Chincholi, Dt Ahmadnagar. Chalcolithic [4.14.6] and early historical [4.18.9] site.

IAR 1959-60.

Chincholi, Dt Chandrapur. Late Stone Age (Mesolithic [4.5]) site.

IAR 1967-8.

Chinchvhire, Dt Ahmadnagar. Series I (Middle Palaeolithic [4.3]) tools and microliths of Chalcolithic [4.14.6] affinity.

IAR 1959-60.

Chingundi, Dt Bijapur. Megalithic [4.17.8] site.

IAR 1965-6. Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, p. 227.

Chinna-Dandukonda, Dt Anantapur. Neolithic habitation [4.6.8] site. See AKKAMMAKONDA.

IAR 1965-6.

Chinnakanal, Dt Kottayam. Menhirs [4.17.10].

IAR 1965-6.

Chinnakatti, Dt Dharwar. Megalithic [4.17.8] site largely with stone circles.

Progress of Kannada Res. in Bombay State, 1947-52, p. 22.

Chinnakothaliki, Dt Kurnool. Late Stone Age (Mesolithic [4.5]) site.

IAR 1964-5.

Chinnakottur, Dt Dharmapuri. Megalithic cists [4.17.9].

IAR 1964-5.

Chinna Kudala, Dt Cuddapah. Megalithic site with dolmens [4.17.7].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Chinnamalli, Dt Gulbarga. Mound (of unspecified nature).

Jour. Geological Survey of Hyderabad, 5, 1, p. 56.

Chinnamettukkali, Dt Tiruchchirappalli. Megalithic [4.17.9] site yielding more than 50 stone circles adjoining an urn-field without any lithic appendage.

IAR 1963-4. Gururaja Rao, B.K., 1971, in *Prof. Nilakanta Sastri Felicitation Vol.*, Madras.

Chinnasandra, Dt Kolar. Megalithic [4.17.8] site with a number of stone circles.

IAR 1955-6. Seshadri M., 1960, *Report on the Jadigenahalli Megalithic Excavations*, Bangalore, p. 4.

Chinnappanduranpalli, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 2, 1, p. 934.

Chinnayapalli, Dt Cuddapah. Early, Middle and Late Stone Age (Lower and Middle Palaeolithic [4.2, 3] and Mesolithic [4.5]) tools.

IAR 1964-5.

Chinnakavundam Valasu, Dt Coimbatore. Megalithic [4.17.9] site.

IAR 1961-2.

Chinnikatti, Dt Dharwar. Megalithic stone circle [4.17.8].

IAR 1958-9.

Chinohalakote, Dt Raichur. Early historical [4.18.11] site. Sherds of the Russet-coated Painted Ware [11.22] and Black-and-red Ware were found.

IAR 1961-2.

Chinpai, See BAKESWAR AND KOPAI VALLEYS.

Chintalacheruvu, Dt Krishna. Site with dolmens [4.17.7].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Chintalapalayam, (13°48'; 79°35'), Dt Chittoor. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAR 1967-8.

Chintalattmakuru, Dt Nellore. Lower and Middle Palaeolithic tools [4.2, 3] comprising disc, pebble chopper and core

Aiyappan, A., 1942, *Manley Collection of Stone Age Tools*, Mem. ASI, 68, p. 5.

Chintamadi Dibba, Dt Srikakulam. Early historical site.

IAR 1971-2.

Chintamreddipalli, Dt Cuddapah. Palaeoliths (of unspecified nature).

Foote, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Chintaparti, Dt Chittoor. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3]) tools.

IAR 1962-3.

Chipyana, Dt Bulandshahr. Early historical and medieval site.

IAR 1963-4.

Chipkuthi, Dt Bankura. Microliths and flakes [4.5].

IAR 1961-2.

Chiramana, Dt Nellore. Lower [4.2] and Middle Palaeolithic [4.3] site.

IAR 1965-6.

Chirand (25°45'; 84°50'), Dt Saran, also called Cherand or Cheran, on the bank of the Ghaghra, 11 km e. of Chapra. Hunter's *Statistical Dt Account* of 1877 mentions it as on the bank of the Ganga, but Carlleyle, (ASI—AR, 22, p. 74) saw it on 'the junction of an old river channel (old bed of Ghaghra) with the Ganges', the site already partially cut away by the river and the resultant high cliff of earth revealing the ruins of ancient wells, red-ware sherds and numerous ancient bricks of various sizes including ones with convex curve, the last probably of a *stupa*. Carlleyle also found a mosque entirely built out of the ruins of a Hindu temple, with eight pillars or pilasters of Hindu character inside and an inscription on its door-

way in Kufic characters mentioning the erection of the mosque by Sultān 'Abul' Muzaffar Hussain Shah of Bengal in A.H. 909 (A.D. 1503). Dey, 1927, mentions the existence of a few Buddhist images. The old *Dt Gazetteer* also mentions Chirand as a Buddhist site. Various identifications of the site have been proposed and the *Cirāṇḍa-māhātmya* gives legends about the place.

Excavations conducted by the Directorate of Arch. and Museums, Bihar, for seven seasons between 1962-3 and 1972-3. (*IAR* 1962-3, p. 6; 1963-4, p. 6; 1964-5, p. 6; 1968-9, p. 5; 1969-70, p. 2; 1970-1, p. 6; 1971-2, p. 6) revealed five broad cultural Pds, viz. Pd I (Neolithic) Pd II (Chalcolithic), Pd III (NBPW culture), Pd IV (1st century B.C. to 3rd century A.D.), and Pd V (late historical).

Pd I covering 3-5 m thick deposit has revealed a full-fledged Neolithic culture [4.6.4] represented mainly by bone tools and decorated pots, besides other associated finds. Bone (including antler) implements include different types of celts, scrapers, chisels, hammers, needles, points, borers, awls, diggers, a shaft-straightener (*baton de commandement*), pins, styli, tanged and socketed arrowheads and many unfinished tools, such as the shoulder bone of an ox probably used as a shovel. Bone ornaments are represented by pendants, ear rings, bangles of ivory and tortoise bone, discs and combs. The neoliths include celts, hammers, pestles, querns, balls, etc., usually made of quartzite, basalt and granite, and microliths are represented by parallel-sided blades, scrapers, arrowheads, serrated points, notched blades, points, lunates, borers and a few geometric microliths generally made of chalcedony, chert, agate, jasper, etc. Beads of chalcedony, agate, jasper, marble, steatite and faience represent different types, such as long tubular, long barrel, short barrel, cylindrical, triangular and disc-shaped, and terracotta objects include humped bulls, birds, *nāgas*, bangles, beads, balls and punctured decorated objects.

Pottery [11.1.3], generally handmade and rarely made by the turn-table method, with a predominance of red ware and lesser frequency of grey, black and black-and-red [11.6.4] wares, represents the ceramics of the Pd. The exterior of numerous grey pots shows lustrous burnishing while their interior is rough and hard-brushed. The types include: the vase, some broad-mouthed and narrow-necked and a few spouted; bowl including lipped, perforated, footed, broad-lipped, oval and channel-spouted; begging bowl; bowl with stand; footed cup; miniature pot; spoon or ladle; a knobbed sherd (type unascertainable); and a miniature handmade dish in red ware with double perforation on four points representing a toy balance. An applied band on the neck of the vase conceals the luting of the neck with the body. Specimens with mat impression and post-

firing graffiti [20.1] are also met with. Post-firing painted designs representing criss-cross, concentric semicircles, wavy lines, dots forming *tri-śūla*, etc., are usually noticed on the grey ware and rarely on the red and black-and-red wares.

A circular floor, about 4 m in diameter, with a series of open hearths, a few post-holes near the floor and a few burnt chunks of clay with reed or bamboo impression have also been encountered in the late Neolithic level. The local Neolithic people thus settled on the alluvial deposit of the Ganga, living in circular houses made of wild reeds. The dwellings had generally mud boundary walls.

The discovery of rice, wheat, barley, *mung* and *masur* in a charred condition and a few burnt clay pieces with paddy-husk impression bear witness to the cultivation of these cereals and legumes [2]. Bones of animals, birds, fish and fish-scales and remains of shells and animals are indicative of the non-vegetarian food practices of the people. The occurrence of bones of the elephant, rhinos, buffalo, ox, stag and deer suggest the association of the people with these animals.

Since the lowest Chalcolithic level at Chirand that followed the Neolithic has been ¹⁴C dated to 1950 B.C., its Neolithic strata may be dated to 2000 B.C.

Pd II covering at places about 5-50 m thick Chalcolithic deposits shows three occupational levels divided into two Sub-pds. Like their predecessors Chalcolithic folk lived in houses made of reeds and bamboos with mud plaster, their dwellings, comparatively large in dimension, having floors of burnt earth. The earliest level of this Pd has revealed a circular hearth and a few post-holes. A post-cremation burial has been suspected on the top level of the Pd.

The plain and painted Chalcolithic pottery [4.14.3] includes the black-and-red [11.6.4], steel-grey and black and red wares, predominated by the first kind. The types in black-and-red and red wares include the dish-on-stand, long-necked jar, lipped bowl, basin, bowl on ring-base, spouted vessel, perforated pot (sometimes four-legged and sometimes with ring-base), lipped jug, trough, dish, bowl, some with elongated lips. Black-slipped and black-and-red wares have also the *lotās* with high neck and corrugated shoulder. The bowl and dish show painted designs in groups of dashes and wavy or straight lines in white on black surface. The neck and shoulder of the vase have paintings in creamy-white. A few sherds of the black ware are also painted.

Other associated finds include: microlithic cores, waste flakes and small nodules; a few neolithic celts; pins and tanged and socketed arrowheads of bone; styli of bone and ivory; a bead and a few corroded pieces of copper; terracotta beads, some of them pear-shaped and a few with incised decorations; stone beads of steatite

and chalcedony; balls, pestles and querns [6.19] of stone; and bones of birds and fish.

As stated above the earliest level of this Pd was dated by ^{14}C to $1650 \pm 100 \text{ B.C.}$

The upper level of this Pd II B has yielded numerous iron objects and exposed animal burials containing animal bones, potsherds, microliths and bone arrowheads and pins.

Pd III, with an average thickness of 2-45 m, represents the NBPW culture [4.18.3]. Fine specimens of the NBPW [11.16] are found in different shapes and shades associated with fine painted black-and-red, grey, black and red wares. The painted designs are executed in white on a black surface and in cream pigment on the red surface. A few pieces of the black-and-red and black wares show graffiti.

The iron implements of the Pd are represented by sickles, axes, ploughshares, daggers, lances, knife-blades, etc. The other finds are terracotta human, animal and *nāga* figurines [17.1], toy-carts and balls, beads of semiprecious stones and terracotta, copper antimony rods, bone arrowheads and pins, stone ear studs, balls, pestles and querns, copper punch-marked and cast coins [3.1], a few neolithic celts and terracotta double-faced mask. An animal burial in a specially excavated pit with potsherds, charcoal and bone arrowheads and pins has been noticed.

On the upper level of this Pd there are remains of baked-brick structures, evidence of mud walls being also present; the floor associated with the latter is of rammed earth.

Pd IV represents the culture of the 1st century B.C. to the 3rd century A.D., which includes the Kushan period. The structural remains, generally built of burnt bricks, belong to both monastic and residential buildings. The former represent a Buddhist monastery built in blocks; each block contains three cells with a veranda in front. Of the residential structures one of the blocks shows two small interconnected rooms with a drain passing through their floors into a square cistern outside the main building. Probably these rooms are a bathroom and lavatory. Further a shrine-like square chamber of thick and massive wall has been exposed. The average size of the cells is 2.3 m sq. A monastic kitchen, about 100 steps to the w. of the monastic establishment, is constructed of mud wall and has a *surkhi*-rammed floor with the evidence of an oven with associated burnt material. The kitchen area has yielded a terracotta torso of Hārīti. The living-room, bathroom and lavatory measure 4.4×2.32 , 1.40×0.99 and $1.86 \times 1.42 \text{ m}$ respectively. The bricks used in both monastic and residential structures measure $41 \times 25 \times 6 \text{ cm}$. These structural remains show five phases; the last two phases are very poor and clumsy, almost built of brickbats of earlier structures. The structures of first two

phases had tiled roofs, as terracotta tiles are associated with them.

Both the plain and utilitarian pottery of the Pd, predominated by red ware in association with blackish-grey ware, has various shapes and medium to coarse fabric. No sherds of the black-and-red ware or NBPW are encountered.

The stone objects include balls, bangles, querns, pestles, weights, ear rings, rings, pots and beads. Beads with various shapes are made of semiprecious stones, such as agate, jasper, basalt, chalcedony, crystal, carnelian, coral, soapstone and amethyst which are exotic to Chirand. Numerous bone, shell and ivory objects, such as antimony rods, bangles, beads, styli, arrowheads, pins, rings and a pot, and various glass objects represented by bangles, rings and beads are also present. Also have been recorded about 400 crucibles of terracotta; antimony rods, bangles, beads, wire, ring and a pot of copper; arrowheads, spoon, sword, pot, blade, nail, nut-cutter and knife of iron; and terracotta human and animal figurines, decorative pieces, play objects, skin-rubbers, corn-rubbers and balls. The terracotta human figurines, mostly handmade and crude, have non-Indian features. Other terracotta objects include wheels, weights, balls, potters' stamps, ear ornaments, bangles, discs and beads. Of the terracotta objects used for ceremonial purposes are humped bulls, *nāgas*, mother goddesses [12.6], Naigameśa, a perforated circular amulet having Sūrya on a chariot drawn by four horses and a votive tank with three drummers [12.11]. The discovery of Kushan copper coins including a hoard of 88 such coins, a terracotta sealing with early Brāhmī script and few neolithic celts in this Pd deserve special mention.

Pd V, represented by a 3 m deposit, has revealed that the site was deserted after the 3rd century A.D. and reoccupied in the late historical and medieval periods. A few flimsy structures, sherds of the glazed, red and black wares, beads of stone, objects of iron and copper, a terracotta female foot, a pot containing five debased gold coins of the Kalacuri Gāṅgeyadeva (A.D. 1045, two gold wire rings, four silver rings, one silver piece and three bronze bangles, three black basalt fragmentary images, one of them representing Trimūrti, the second Tārā and the third unidentifiable, belonging to Pāla period have been found in this period.

Dey, N.L., 1983, *Geographical Dictionary of Ancient & Medieval India*, New Delhi, p. 228. Narain, Lala A., 1972, in *Jour. Bihar Res. Soc.*, 57. Patil, D.R., 1962, *Antiquarian Remains in Bihar*, Patna. Verma, B.S., 1970-1, in *Purātattva*, 4, pp. 19-23.—S.R. ROY

Chiranda, Dt Saran. The mounds yielded grey ware represented by the dish and the bowl, the NBPW [11.16] and associated red ware. Some fragmentary stone sculptures of the late medieval period and a few specimens of

terracotta animal figurines were also found. (Same as CHIRAND?)

IAR 1961-2.

Chiratanur, Dt Chittoor. Lower [4.2] and Middle Palaeolithic [4.3] site.

IAR 1968-9.

Chiraundi, Dt Ranchi. Asura habitation [14.4] site.

IAR 1964-5.

Chirchori, Dt Durg. Megalithic [4.17.6] site.

ASI-AR, 1930-4.

Chirchuri. See SORAR.

Chiri-chinta-varipalle, Dt Chittoor. Six circles enclosing cists with port-holes [4.17.7].

AI, 4, 1947-8, p. 306.

Chirki Nala, Dt Ahmadnagar. Excavation at Chirki Nala on the right bank of the PRAVARA indicated that the Early Stone Age (Lower Palaeolithic [4.2], Acheulian) horizon was represented by a deposit of rubble-gravel which was found to rest on the uneven surface of the amygdular basalt. Overlying the gravel was a fine sandy gravel containing Middle Stone Age (Middle Palaeolithic [4.3]) tools. The tool assemblage consists mainly of various forms of handaxes, cleavers, choppers, scrapers, etc. These tools on the whole display an advanced Acheulian character. The collection also includes tools which on typo-technological grounds show some characteristics of the Middle Stone Age industry. It appears therefore that the Early Stone Age industry in the region represents a late stage of the Acheulian phase. This site is somewhat different from the Stone Age sites commonly found in India. Generally the sites located in the riverine environment are of a secondary nature and the tools embedded in pebbly gravel deposits are disturbed, transported and redeposited. At the present site the morphological character of the tools as well as the associated rubble suggest that they have undergone very little transportation from their original place of deposition. Thus the site possibly represents a temporary camping site of the Lower Palaeolithic man. The presence of a few fossil bones from the site are also indicative of human activity in the region.

IAR 1967-8; 1968-9; 1969-70. Corvinus, G., 1968, in *Current Anthropology*, pp. 216-8; 1968, in *Man*, 63-4, pp. 921-40; in *Indian Antiquary*, 1970, N.S., 4, pp. 13-22. Joshi, R.V., & Marathe, A.R., 1975-6, in *Purāṇatva*, 8, pp. 3-12 (for metrical analysis of handaxes).

Chirola, Dt Ujjain. Early historical site.

IAR 1971-2.

Chiruti, Dt Murshidabad. See RAJBADIDANGA.

Chitawad, Dt Ujjain. Early historical site.

IAR 1971-2.

Chiruti, Dt Ujjain. Early historical site.

IAR 1971-2.

Chitegaon, Dt Jalgaon. A Chalcolithic [4.14.6] site with painted black-on-red pottery similar to that of Savalda [11.12].

IAR 1958-9.

Chitgiri, Dt Bankura. Microliths and historical remains.

IAR 1959-60.

Chitora, Dt Indore. Mesolithic [4.5] site.

IAR 1970-1.

Chitorgarh, Dt Gurdaspur. Black-slipped [11.13] Ware and black-and-red and grey wares.

IAR 1961-2.

Chitra Abri, Dt Garo Hills. Stone artefacts [4.2; 4.6.6] including pebble tools, ground celts, scrapers, points, borers, awls, shouldered celts, cores and hammers.

IAR 1967-8.

Chitradurga, Dt Chitradurga. Neolithic [4.6.9] and Megalithic [4.17.8] sites.

Manavika Bharati, 2, 1 January 1978.

Chitrakot, Dt Bastar. Upper Palaeolithic [4.4] site in the Indravati river valley.

Madhya Pradesh Sandesh, 13 June, 1970, p. 10.

Chitrakut, Dt Banda. Painted rock-shelter [13].

Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad, p. 54.

Chitta, Dt Bidar. Early historical site.

Karnataka Bharati, 11, 3.

Chittaurgarh, Dt Chittaurgarh. Two Palaeolithic [4.2,3] sites were discovered near Chittaurgarh situated at a distance of about 3 km from each other, in a nullah joining the river Berach. The palaeoliths consisted of handaxes, cleavers, choppers and scrapers. Lower Palaeolithic tools were also found in the beds of the rivers Gambhiri, Bamani and Ruparel, two streams near Singoli, the nullahs of Dortha and Parsoli and the slopes near the village of Somta near Chittaurgarh.

Excavation in the Mahasati area in the fort enclosure laid bare four shrines, ashes and charred bones. Of the five structural phases, Phase I roughly dates to c. 11th century A.D. An interesting structure was a paved platform over which stood a *sati*-stone. Two other loose *sati*-stones were also found.

IAR 1953-4; 1954-5; 1955-6; 1956-7; 1958-9; 1959-60.

Chittedu, Dt Nellore. Lower [4.2] and Middle Palaeolithic site.

IAR 1968-9.

Chittoriyan Magari, Dt Chittaurgarh. Banas culture [4.14.1] site in the vicinity of Pind on the river Pind, a tributary of the Wagan.

Agrawala, R.C., 1979, in *Man & Environment*, 3, p. 91.

Chodhal, Dt Dharwar. Early historical remains.

IAR 1960-1.

Chokahatri, Dt Ranchi. So-called Asura burial ground [14.4] comprising tombs mostly of the dolmen form.

Bihar Dt Gazetteer, Ranchi, pp. 243-4. Dalton, E.T., in *Jour. Asiatic Soc. Bengal*, 1873, p. 116.

Chokavi, Dt Bijapur. Chalcolithic [4.14.8] site. See ALMEL.

IAR 1959-60.

Chokkanathapatti, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 2, 1, p. 934.

Chokri, Dt Tonk. Microliths [4.5].

IAR 1958-9.

Cholachagud, Dt Bijapur. Lower Palaeolithic [4.26] site.

Joshi, R.V., 1955; *Pleistocene Studies in the Malaprabha Basin*, Poona and Dharwar, p. 34.

Choli, Dt Nimar. A microlithic industry was located near Choli, 16 km n. Maheshwar.

Sankalia, H.D., Subbarao, B., & Deo, S.B., 1953, in *S.W. Jour. of Anthropology*, Univ. of Mexico, 9, 4.

Chopali Pahar, Dt Palamau. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1970-1.

Chopan, Dt Mirzapur. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1962-3.

Chopani-Mando (24°55'; 82°5'), Dt Allahabad, located on the middle terrace of the BELAN in its earlier meander within an old flood plain of the river, at a distance of approximately 77 km from Allahabad in e. and s.-e. direction, with a total spread of 15000 sq m with a view to ascertaining the nature and development sequence of the lithic industries of the area and also to obtaining information regarding the life of their authors, excavation was conducted at the site by the Univ. of Allahabad under the direction of G.R. Sharma in 1967 (only for sequence) and in 1977-8. The excavation brought to light a total habitation deposit of 1.55 m in thickness comprising 10 layers divisible into three phases as below.

I. Epipalaeolithic: Layer 10 belonging to this phase has yielded both Upper Palaeolithic (20%) and Early Mesolithic (80%) [4.4, 5] artefacts. The assemblage comprises large and broad blades, burins, parallel-sided blades, blunted backs, borers, scrapers and points, along with numerous cores, flakes and blanks mostly fashioned on cherty material. Compared to the Mesolithic industry of the subsequent phase these tools are fairly large and broad in size and bear bold retouchings.

II. Early Mesolithic: This phase is subdivided into subphases A and B, on the basis of the absence and presence of geometric tool shapes. Subphase A, Early Mesolithic with non-geometric microliths unassociated with pottery, is represented in layers 9 and 8, yielding finished tools like large and broad blades, micro-burins, blunted backs, pen-knife blades, notched blades, borers, points (both simple and tanged varieties), scrapers and cores, flakes and wastes, made generally on chert (95%), tools made on chalcedony constituting 5%. The artefacts of this subphase are smaller in size than those of Phase I. Associated with this subphase are two circular

huts measuring 3-8 m in diameter. The floor of one hut is stone-paved.

Subphase B, Early Mesolithic with geometric microliths, layers 7 to 4, yields geometric microliths also unassociated with pottery. The microliths made on chert (90%) and chalcedony (10%) comprise tools like parallel-sided blades, blunted-back blades, pen-knife blades, notched blades, serrated blades, micro-burins, borers, points—both with and without tang—scrapers, lunates, triangles (only scalene type), trapezes and numerous cores, flakes and blanks. The triangle precedes the trapeze. Ground plans of two circular huts belonging to this subphase have been exposed. The fully exposed huts measure approximately 3 m in diameter. On the periphery of some of the huts have been found large stones. The floor of a partially exposed hut is stone-paved. The floors of all the huts are littered with microliths, stone pieces, burnt clay lumps with reed-marks, fragmentary animal bones and a few charcoal pieces. The emergence of some new tool types, including the geometric forms, the increase of chalcedony and other fine-grained materials to 10% and a further reduction in the size of the tools are some of the noteworthy features of this subphase.

III. Advanced Mesolithic or Proto-Neolithic: The artefacts from layers 3 to 1 comprise an advanced Mesolithic or Proto-Neolithic. The microliths which show a further reduction in size consist of various types of blades—parallel-sided, blunted back, pen-knife, notched and serrated-borers, micro-burins, points and arrow-heads—with simple and tanged varieties,—scrapers, lunates, triangles—scalene and isosceles,—trapeze, saws and tranchets and large numbers of cores, flakes and debitage. The percentage of chalcedony and other finer materials like agate and carnelian increase to 20%. Plans of as many as 13 circular or oval huts and four hearths have been exposed. The huts lie very close to each other varying in diameter from 4.5 m to 2.5 m. On the periphery of some of the huts have been noticed comparatively large stone pieces. On the floor of the huts is a concentration of microliths and stone pieces. Among the other finds lying on the floor in considerable numbers mention may be made of potsherds, fragmentary animal bones, charcoal pieces, burnt clay lumps with reed and bamboo impression, hammer-stones and anvils of different sizes and shapes having pitted and battered surface, fragments of flat querns, mullers, muller-cum-hammer-stones [6.19], retouchers(?), bolls or sling-balls and ring-stones. The hearths containing loose ashy soil also yield animal bone pieces, charcoal and burnt clay clods. This phase is also characterized by the emergence of friable, handmade pottery comprising ill-fired khaki-coloured ware, ochrous red ware and moulded or stamped ware. Bowls and

vases of medium to small size with featureless rims are the only shapes met with in all the above wares. A few burnt clay lumps contain rice and rice husk impressions possibly a wild variety of rice.

In the absence of any ^{14}C dates its chronological framework can only tentatively be worked out in the light of the following available evidences pertaining to identical cultures in the BELAN valley and the surrounding areas: (1) A development sequence almost identical to that of Chopani-Mando is also observed in the BELAN section where the three deposits—humus soil, aeolian and subarial layers—above the cemented gravel III have yielded industries of the Epipalaeolithic, Early Mesolithic (pre-pottery non-geometric microliths) and Late Mesolithic (geometric microliths associated with pottery) respectively. The cemented gravel III—the horizon of the Upper Palaeolithic immediately preceding the Epipalaeolithic—of the BELAN has yielded a ^{14}C date of 17765 ± 340 B.C. (2) The Mesolithic site of SARAI-NAHAR-RAI, Dt Pratappgarh, the lithic assemblage of which is almost identical to that of Phase II B of Chopani-Mando, has produced a ^{14}C date of 8395 ± 110 B.C. (3) one of the ^{14}C dates from the Neolithic deposit of KOLDIHWIA is 5440 ± 240 B.C. Thus in the light of the above evidence the entire occupational deposit of Chopani-Mando may tentatively be placed within a time span of 17000 to 7000 B.C.

—B.B. MISRA

Chorabana, Dt Allahabad. Site yielding Neolithic celts [4.6.3].

IAI 1969-70.

Chorai, Dt Indore. Mesolithic [4.5] site.

IAI 1970-1.

Choral, Dt Indore. Microlithic [4.5] site.

IAI 1957-8; 1958-9.

Chorat, Dt Panna. Microliths [4.5] comprising of backed blades, points and prismatic cores were found in the topmost levels of the site.

IAI 1957-8; AI, 17, 1961, p. 24.

Chorda-dih, Dt Santal Parganas. Microlithic [4.5] site.

IAI 1963-4.

Chorgaon, Dt Dhule. Tools of Series II (Middle Palaeolithic [4.3]) found.

IAI 1957-8.

Chorpura, Dt Shivpuri. More than ten rock-shelters [13] with paintings and painted writings of the 1st-2nd and 14th centuries, executed in red ochre.

IAI 1956-7.

Chosala, Dt Bhavnagar. Harappa [4.9] site.

IAI 1971-2.

Chosla, Dt Ajmer. PGW [11.14], non-megalithic black-and-red ware [11.6], NBPW [11.16] and microliths [4.5].

IAI 1958-9.

Chouldari, Dt Great Andaman. Kitchenmidden [14.11] site of sub-Neolithic culture near Port Blair.

Cipriani, L., 1955, in *Actes IV Congress des International Sciences der Anthropologie und Ethnologie*, 2. Dutta, P.C., 1962, in *Wiener Völkerkundliche Mitteilungen*, 10, 5, 1-4, pp. 17-29; 1963, in *Current Anthropology*, 4, p. 356.

Chouradeo, Dt Saharanpur. Late Harappa [4.10], PGW [4.15] and OCW [4.12] site.

IAI 1967-8.

Chovvannur, Dt Trichur. Rock-cut megalithic cave [4.17.10].

AI, 12, 1956, p. 97.

Chowke, Dt Ratnagiri. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAI 1970-1.

Chuga-ala. See LADHOT.

Chundadi, Dt Panch Mahals. Mesolithic [4.5] site.

IAI 1971-2.

Chundel, Dt Tiruchchirappalli. Rock-cut cave [4.17.10]. Vessels of the Megalithic Black-and-red Ware [11.15.3] were also found.

IAI 1963-4.

Chudiala, Dt Rupnagar. PGW [11.14] site.

IAI 1964-5. Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 123.

Chunehti-Gara, Dt Saharanpur. Harappa ware [11.9] and OCW [4.12].

IAI 1966-7.

Chunethi Shekh, Dt Saharanpur. Late Harappa [4.10] and OCW [4.12] site.

IAI 1967-8.

Chunkalia, Dt Panch Mahals. Late Stone Age (Mesolithic [4.5]) site.

IAI 1971-2.

Chutti, Dt Nellore. Lower [4.2] and Middle Palaeolithic [4.3] site in the Venkatagiri river valley.

IAI 1965-6.

Cranganore, Kodungallur, Dt Trichur ($10^{\circ}15'$; $76^{\circ}16'$), the reputed capital of the Ceras, also said to be the place of location of Roman emporia, with a temple for Augustus according to the *Peutinger Tables* (2nd to 3rd century A.D.) which refers to this place as Muziris (Wheeler, 1946, p. 19). At present it is on the n. bank of the estuarine Periar river just before where it joins the sea. The river however has locally shifted its delta course considerably. This place is celebrated as Mahodai or Mahodayapuram, the seat of the second Cera empire of the 9th century. An excavation by the Cochin State had yielded only a medieval (13th-14th century) deposit at the place known as Ceraman Parambu.

In 1969-70 the writer excavated here on behalf of the ASI, the investigation being spread out in the present-day localities of Tirukkulasekharapuram, Kilattali, Tiruvanjikulam Karuppadana and Madilakam (IAI 1969-70, p. 14). Of these the first three are closely situated suburbs of Kodungallur, while the last two are about 7 to 8 km away but on the ford of the same river

slightly upstream and have been consistently referred to in early Tamil and Kerala literature as the place of the early Cera capital. The literary nexus which strengthens this was that Ilango, the princely author of the Tamil classic *Silappadikāram*, was an early Cera prince, the brother of the ruling king Seṅguṭṭuvan contemporary with the Roman period and king Gajabāhu of Sri Lanka, that he resided at Madilakam and further that Karupadana was taken to be the same as Karur or Karur-Vanji, the first Cera capital, freely mentioned in the Tamil Saṅgam classics. Excavations revealed a surprising coevality for all these locations. The cultural material, viz. pottery, coins, tiles, laterite walls, etc., were all of the 9th-11th century deposit of about 1 to 1½ m thickness, yielding a sturdy red ware, Chinese Celadon Ware [11.25] and Coja coins clearly dating their range of time. Kilattali and Tirukkulasekharapuram are centres of two famous temples of the same name, clearly as-

cribed by epigraphical, architectural and sculptural evidence to the 10th century. Thus all evidence definitely points to the place as more likely to be the seat of the second Cera empire, viz. Mahodai. The remains of the Roman mart of the first Cera period are still elusive. Several bone sections also laid in the area on either side of the river bank between Kodungallur and the sea face yielded no specific evidence of any nature earlier than the 9th century.

Soundara Rajan, K.V., 1976, in *Indian Hist. Congress (1976) Souvenir—Archaeological Investigations in Kerala*. Wheeler, R.E.M., 1946, in *AI*, 2.—K.V. SOUNDARA RAJAN

Cunipalaiyam, Dt Chingleput. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3]) tools.

IAR 1963-4.

Cunjallum, Kunjaram, Dt Chingleput. Lower Palaeolithic [4.2] site on the river Korttalayar.

Foote, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 172.

D

Dabakheri, Dt Kurukshetra. PGW [11.14] site.

Kurukshetra Univ. Res. Jour., 10, 1976, pp. 28-9.

Dabathua, Dt Meerut, PGW [11.14] site.

IAR 1969-70.

Dabheri, Dt Bharuch. Late Stone Age (Mesolithic [4.5]) site.

IAR 1969-70.

Dabka, Dt Meerut. PGW [11.14], grey ware associated with the NBPW [11.16], black-and-red ware and medieval ware.

IAR 1962-3.

Dabkaheti, Dt Chandrapur. Palaeolithic (of unspecified nature) site.

IAR 1960-1.

Dabkia, Dt Jabalpur. Microliths [4.5] and a copper celt [4.11].

IAR 1957-8; 1961-2.

Dabla-ka-Dhora, Dt Jalore. Microlithic site yielding blades, cores and scrapers [4.5].

IAR 1967-8.

Dabli, Dt Ganganagar. PGW [11.14] and Rang Mahal [11.24] site. See SARASVATI VALLEY.

Unpublished.

Daboh, Dt Bhind. NBPW [11.16] and black-and-red ware site.

IAR 1958-9.

Dabok, Dt Udaipur. Series I (Lower Palaeolithic [4.2]) tools and microliths [4.5].

IAR 1956-7; 1959-60.

Dabra¹, Dt Bankura. Microliths [4.5].

IAR 1959-60.

Dabra², Dt Bharuch. Middle Palaeolithic [4.3] and Mesolithic [4.5] site.

IAR 1970-1.

Dabra river, Dt Gwalior. Early Stone Age tools (Lower Palaeolithic [4.2]) consisting of handaxes, cleavers and scrapers were found on the surface along the banks of the Dabra.

IAR 1968-9.

Dabris, Dt Parbhani. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1970-1.

Dabur, Dt Santal Parganas. Microliths [4.5] and black-and-red ware.

IAR 1963-4.

Dachur, See BOGGERU VALLEY.

Dadampatti, Dt Madurai. Megalithic [4.17.9] site.

Jour. Asiatic Soc. Bengal, 57, 1888, pp. 48-71.

Dadaria, See PURNA VALLEY.

Dadasar Tral, Dt Anantnag. Megaliths [4.17.2].

IAR 1966-7.

Daddi, Dt Belgaum. Megalithic [4.17.8] site.

IAR 1966-7.

Dadha¹, Dt Bulandshahr. Grey ware.

IAR 1962-3.

Dadha², Dt Purulia. Middle Stone Age (Middle Palaeolithic [4.3]) scrapers, blades, points, cores and flakes were picked up together with Late Stone Age (Mesolithic [4.5]) microlithic blades, crested-ridge blades, lunates, scrapers, points, borers, burins and fluted cores.

IAR 1967-8.

Dadheh, Dt Ludhiana. Late Harappa [4.10] and PGW [4.15] site.

Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 122.

Dadheri, (30°40'; 76°15'), Dt Ludhiana, 5 km e. of Gobindgarh, excavated by the writer on behalf of the ASI in 1976-7. A 6 m thick deposit has a threefold sequence of cultures, Sub-pds I A and I B and Pd II, the middle one showing an overlap between the late Harappa [11.4] and PGW [11.4] as at BHAGWANPURA², KATPALON, MANDA and NAGAR.

In Sub-pd I A, late Harappa, there is evidence of mud-walled houses and huts. A huge storage jar and other pottery in the late Harappa tradition, copper objects, terracotta beads, wheels and round cakes [6.27], faience bangles and terracotta painted bull have been found. In Sub-pd I B which marks the arrival of the PGW people and during which there was a flood, three structural phases have been noticed. The earlier people lived in semicircular huts as attested by the position of post-holes. Three oval structures of burnt earth are probably of a religious character. In the next stage houses are of mud walls; one such room measuring 2.50 × 1.10 m of a house complex can be identified. The last phase is represented by a wall of baked brick of two sizes, 12 × 12 × 7 and 25 × 20 × 5 cm, brickbats and brick jelly. The other finds include terracotta beads and wheels, copper rings and faience bangles. There is no iron.

The last phase, Pd II, medieval, has remains of a mud

wall, typical plain and painted pottery and terracotta figurines and gamesmen [6.7.2].

—J.P. JOSHI

Dadhi (31°5'; 76°30'), Dt Solan. Lower Palaeolithic [4.2] site in the SIRSA VALLEY.

IAR 1954-5.

Dadmarhatti, Dt Belgaum. Megalithic site with passage chamber tombs [4.17.8].

Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 15-23.

Dadri¹, Dt Bhiwani. Pre-Harappa [4.8] and Copper Hoard [4.11] site.

Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 126.

Dadri², Dt Bulandshahr. Early historical and medieval site.

IAR 1963-4.

Dadri³, Dt Mahendragarh. Flat celt of copper [4.11].

State Museum, Jhajjar, Collection.

Dadri⁴, Dt Meerut. Historical mound.

IAR 1970-1.

Dadupur, Dt Lucknow. PGW [11.14] and NBPW [11.16] site.

IAR 1960-1.

Dagamagapur, Dt Mirzapur. Microliths [4.5].

IAR 1962-3.

Dagru (30°54'; 75°0'), Dt Faridkot. Pre-Harappa [4.8] site in the SUTLEJ VALLEY.

Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 122.

Dahar, Dt Kangra. Terraces of the SUTLEJ yielded Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1961-2.

Daheru, Dt Ludhiana. Harappa [4.9] site.

IAR 1961-2. Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 122.

Dahidula Budruk, Dt Dhule. Microliths with ochre-coloured pottery.

IAR 1957-8.

Dahidula Khurd, Dt Dhule. Microliths and sometimes neoliths were found in association with the black-on-red painted pottery along with a coarse grey ware similar to that from the Chalcolithic levels at BRAHMAGIRI and BAHAL. The site also contained the remains of burials together with Black-and-red Ware bearing graffiti [20.1].

IAR 1957-8.

Dahigara, Dt Singbhum. Lower Palaeolithic [4.2] site. See DHALBHUM.

Dahisar, Dt Greater Bombay. Middle Palaeolithic [4.3] site.

IAR 1957-8.

Dahivad, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1966-7.

Dahivel, Dt Dhule. Palaeolithic tools [4.2.4] mostly on flakes of basaltic trap were found together with a couple

of fragmentary fossil bones.

IAR 1959-60.

Dahman, Dt Hissar. Early historical site.

Silak Ram, 1972, unpublished thesis, Kurukshetra Univ.

Dahra, Dt Ghazipur. Site yielding Black-slipped Ware [11.13] of the RAJGHAT type.

IAR 1962-3.

Daidungri (22°00'; 71°05'), Dt Rajkot. Post-Harappa [4.10] site corresponding to RANGPUR II C and III.

AI, 18 & 19, 1962 & 1963, p. 205.

Daimabad (19°31'; 74°42'), Dt Ahmadnagar, a deserted village situated 18 km s.e. of Shrirampur, a Taluka headquarters, on the left bank of the river Pravara, a tributary of the Godavari. The site was discovered by B.P. Bopardikar (IAR 1958-9, p. 15) and has been excavated on three different occasions—first in 1958-9 by the first writer (IAR 1958-9, p. 15), then in 1974-5 by S.R. Rao and finally between 1975-6 and 1978-9 by the second writer—all of the ASI.

The first excavation revealed evidence of three Phases. Painted pottery was scarce in Phase I. The main ceramic was a thick and coarse grey ware, similar to that of BRAHMAGIRI I, with such types as the large globular urn with flared rim, basin with a slightly out-turned rim, spherical bowl and stemmed lid with a pointed or rounded tip, the rim and the tip being painted in red ochre. The other associated ware was handmade with incised and applied decorations. To this phase also belonged a grave represented by a skeleton, partly cut by a later pit. Blades of chalcedony and beads of terracotta and semiprecious stones were the other finds. Phase II was represented by the well-defined Malwa Ware [11.10]. Of medium fabric, this ware was treated with a thin slip which had turned brown, deep-red, light-orange or pink in colour. The ware was painted in black with geometric designs such as hatched triangles, squares and lozenges, hooks, loops, festoons, etc. The types included the subspherical bowl, sometimes with a tubular spout, shallow cup, short-necked *hāndī*, high-necked jar and vase with a channel-spout. A grave—a specially dug pit with a complete skeleton oriented n.-e. and without any associated furniture—was also found in the levels of this phase. The other finds included a fragmentary celt, a pin-head and a piece of knife, all of copper, terracotta head of a dog and a humped bull and beads of semiprecious stones, shell and faience [16.6]. Phase III was characterized by the occurrence of the Jorwe Ware [11.11]. Of fine fabric, the ware was turned on fast wheel and well-fired. The types mainly included the concave-sided carinated bowl, occasionally with tubular spout, a *hāndī*-type vase with flaring mouth and tubular spout and vase with globular body, high neck and beaded rim. The painted designs in black were linear and geometric though animal motifs were also

present. The burnished grey ware and the handmade thick coarse ware persisted. Microliths, stone mace-heads, pottery spindle-whorls [6.25], beads of semi-precious stones, a gold coil, two terracotta human figures and a terracotta dog were the other objects. Two kinds of burial practices were in vogue during this phase—extended inhumation and urn-burial. Of the two skeletons one was completely despoiled. The second, oriented n.-s., rested on a rammed clay floor in the habitation area without any grave goods. The part of the skeleton below the knee was damaged. It was not placed in a pit but around it were 14 post-holes suggesting a canopy over it. It was therefore a case of lying-in-state before burial. In the urn-burial type the urns of burnished grey ware with globular body and flared mouth were placed mouth-to-mouth with n. s. orientation in a pit just sufficient to accommodate them. In the urn were placed the skull, ribs and lower extremities. A single urn-burial, with the mouth of the urn facing s., was also met with. For burying a grown-up child three urns were placed horizontally. A carinated bowl and spouted *hāndī*-type vase formed the subsidiary pots.

The chance discovery of a cache of four solid bronze figures at the site in 1974—a chariot yoked to a pair of bullocks and driven by a man, an elephant, a rhinoceros and a buffalo—necessitated further excavation of the site. [A Harappa affiliation of the bronze objects has been claimed by some (Dhavalikar, 1979; Sali, 1979) but disputed by others (Agrawal *et al.*, 1978, pp. 41-3).] Rao, 1978, excavated the site with the main objective of reassessing the cultural sequence of the site and ascertaining its cultural contacts, if any, with the Harappa [4.9] or late Harappa [4.10] settlements of w. India. He divided the occupational deposit into three Pds, I, II and III. Pd I (1900-1700 B.C.) was divisible into two Sub-pds A and B. Sub-pd I A represented the first Neolithic [4.6] settlement and was noted for plain handmade grey pottery. Sub-pd I B was characterized by pottery made on slow wheel, painted in red over greyish or red surface. The three main ceramics of Sub-pd I B were the grey-slipped ware, a dark-grey burnished ware and a dull-red ware. There were a few vessels turned on fast wheel. The painted designs consisted of vertical wavy lines drawn in groups, cross-hatched bands and ladders and an antelope. These designs suggested, according to Rao, contact with the late Harappans who had by now moved to the Tapti and Godavari valleys. Pd II (1700-1500 B.C.) was characterized by the Malwa Ware and cream-slipped ware. Rao opined that the paintings on the Malwa Ware were influenced to a large extent by the late Harappa designs such as the hatched diamonds and dancing figures. During Pd III (1500-1000 B.C.) the Malwa Ware decreased and the Jorwe Ware increased. The main types found by him in the Jorwe Ware were the

stemmed bowl of RANGPUR II C type, concave-convex bowl, spouted and globular jar. Rao also claimed to have identified furnaces used for refining copper, as also evidence of survival of the Indus script [20.4.1] in Pds II and III. The evidence in support of the use of a simplified Indus script at Daimabad, according to Rao, was the occurrence of Indus symbols on pottery and most of the symbols were identical with what he calls the cursive alphabet of the late Harappa phase in Gujarat and the Indus valley.

Excavation by the second writer, between 1975-6 and 1978-9, in 5 m thick occupational deposit revealed evidence of five phases, each characterized by the occurrence of a distinct class of painted ceramic of its own: Phase I, Savalda [11.12]; Phase II, late Harappa; Phase III, buff-and-cream ware; Phase IV, Malwa; and Phase V, Jorwe.

The smallest settlement among these was that of the Savalda culture which occupied a narrow strip of the Black Cotton Soil [9.1] near the river bank, measuring roughly 3 hectares, whereas the largest was that of the latest Jorwe culture which covered more than 30 hectares, the remaining three settlements covering not less than 20 hectares of area. The site at Daimabad is thus the largest known Chalcolithic settlement in Maharashtra.

The Savalda Ware of Phase I was of medium-to-coarse fabric, made on slow wheel and treated with a thick slip showing crackles and turned light-brown, chocolate, red and pink in colour. It was chiefly painted in ochre-red colour and only occasionally in black and white pigments. The painted designs included arrows, notched or antennae-ended pointed and rounded arrowheads, harpoons, sword-like designs, plant, deer and fish motifs and linear designs such as horizontal bands, radiating lines, groups of short strokes, pointed strokes, wavy lines and oblique strokes. The types were very few such as the vase with outcurved rim and squat globular body, *hāndī*-type vase and vase with short splayed-out rim. The burnished grey ware, the black burnished corrugated ware and the handmade thick coarse red ware with incised and applied decorations were the other associated ceramics.

The houses of this phase were of mud walls with rounded end, trilateral, of single room, two rooms and three rooms. The smallest one-room house was 3.40 m long and 1.60 m wide and the largest 7 m long and 5 m wide. The floors were made of alternate layers of yellow silt and black soil and finally plastered with mud. They were occasionally decorated with fresh water shells.

The people cultivated barley, lentil, common pea, grass pea, black gram/green gram, horse gram and hyacinth bean. Their other material equipment included copper-bronze rings, beads of carnelian and agate, mic-

roliths, tanged arrowheads of bone and stone mullers and querns [6.19].

Phase II was characterized by a thick, sturdy red ware of fine fabric. Made of fine clay mixed with fine sand and powder of lime and/or shells as a tempering material, the ware was turned on fast wheel as is indicated by the uniformly running striation marks on the inside. The core of the ware is fairly dense and uniformly light red or brick-red in colour suggesting that the pottery was baked under controlled as well as uniform heat and oxidizing conditions. On the outside the ware was treated with a thin slip which turned red and occasionally chocolate or light brown, pink, light-grey and their shades. The painted designs in black included horizontal bands on the rim, neck, shoulder and body, cross-hatched triangles, groups of vertical wavy and straight lines between horizontal bands, chain pattern, double-horn motif, plant-like motif, interlaced loops on the inside of rim of dish-on-stand, loops, spirals, rows of dots above and below horizontal band and radiating lines. On one of the almost complete pots (but without rim and neck) was found a painted design in black consisting of two vertical lines above a horizontal band with their upper parts curved making the design resemble a snake. The types included in this ware were the dish-on-stand, dish with internally collared rim, bowl-on-stand, vase with beaded rim, vase with clubbed rim, cup or bowl, vase with flat base and vase with beaked rim. The other associated wares were the ribbed bichrome ware, deep-red fine ware, black-and-pale grey ware, burnished grey ware and thick coarse ware.

The structural remains of this phase were of mud brick and mud walls. Mud bricks were used for walls and a grave. A mud brick wall was fragmentarily represented, the size of one of the bricks being 30 cm in length and 8 cm in thickness; two fragmentary bricks were found bonded together by mortar of black clay in between. These and other brick fragments found in a mass appeared to represent the debris of a collapsed mud-brick wall. A mud-brick-lined grave with an extended human skeleton was found within the occupational deposit. The bottom of the pit, ovaloid in shape, was made in two successive stages. In the first stage mud brickbats, occasional pebbles and clayey earth were rammed, over which a layer of clayey earth mixed with lime gravel and burnt clay lumps was spread and rammed, whereafter it was plastered. Along the sides of the pit were then aligned full-sized mud bricks one edge as also mud brickbats leaving sufficient space for the corpse to rest on the plastered bottom in an extended position with the head towards n. but tilted to the left. The body was covered with a fibrous material like hemp, the fibres of which were found sticking to the skeleton. The grave was then covered with earth mixed with a number of brickbats

into a tumulus and a stone placed at the point where the head was resting. The sizes of the full mud bricks used in the grave were: $32 \times 16 \times 8$ cm and $28 \times 14 \times 7$ cm, both the sizes being in the ratio of 4 : 2 : 1. The mud bricks were found preserved only along the head: the rest of the grave pit was disturbed by later pits.

The available evidence of mud-wall houses was fragmentary: most of the walls were destroyed by later disturbances. The walls were made of black earth with their foundations in the black soil. The shortest extant exposed wall was 45 cm long and 43 cm broad and the longest, lying n.-s., was traced to a length of 33 cm, its thickness varying from 30 to 50 cm. With the help of the extant walls and their traces as also the surviving patches of floor, six structures, called Houses 16 to 21, could be demarcated, although the complete plan of none of them could be made out. Large patches of finely plastered floors were found in Houses 16, 17, 18 and 20. A circular hearth, 50 cm in the diameter and 10 cm deep, containing ash and charred animal bone fragments was found in House 16. In this very house was found a terracotta button-shaped seal bearing an Indus sign [20.41]. In the adjoining House 17 was found another terracotta button-shaped seal with two Indus signs. The lower half of a vase of thick coarse ware with flattish vase was also found embedded in the floor of this house.

The most important finds which have established the Harappa character of Phase II were the two terracotta button-shaped seals and three potsherds, all bearing Indus symbols. The symbols on two of the potsherds were engraved and on one painted in black colour.

Among the other finds special mention should be made of a crescent-shaped potsherd, the shape being artificially given by grinding the edges, bearing on one side an engraved scene of a tiger attacking a buffalo from behind. On the other side is engraved a horizontal row of six lozenges with oblique lines inside the upper half of each lozenge and in the open space between the two lozenges below. Equally important are the finds of: a worn-out terracotta oval-shaped cake; a heart-shaped potsherd; a carrot-type cone of clay from House 20; a fragment of a terracotta rule with a division of 11 mm marked by two incised lines; a circular potsherd bearing deeply engraved cross-mark on both the sides; a fragment of a copper/bronze celt; and a gold-lead bead.

The buff-and-cream ware which characterized Phase III was mainly a slow-wheel-made ceramic, fast-wheel-turned examples being only occasionally met with. Of medium fabric the clay used in the preparation of this pottery contained vegetable matter, indicated by the presence of air-holes in the core which showed a band of grey or ivory suggesting that the ware was underfired. It was treated on the outside with thin slip, flaked off at places, and was painted in black with chiefly geometric

designs, such as cross-hatched triangles, diamonds and squares, horizontal bands, groups of many lines, comb-like design, circles and animal motifs with stippled body. A couple of fragments of graduated terracotta rings used perhaps as measuring devices represented the important finds from this phase. Evidence of symbolic as well as partial burial systems was also met with in this phase.

Phase IV was represented by the Malwa Ware. Ample evidence has now come to light at Daimabad to show that the Jorwe was mainly derived from the Malwa. Types such as the carinated bowl, the *hāṇḍī*-type vase with tubular spout, incurved bowl and the *lotā*, which occur in the Malwa Ware, continue in the Jorwe and become the fossil types of the latter. So also as the so-called black-painted potter's marks and graffito marks. Similarly the double urn burials which are characteristic of the Jorwe culture of the upper Godavari valley occur first in the Malwa levels. In one of the double urn burials of this phase one of the urns was of the Malwa Ware painted in black with the sun, dog and peacock motifs. The dog was a favourite animal, the representation of which occurred frequently on the Malwa Ware, one of the examples being that of a pair of dogs in union. Another noteworthy scene on one of the potsherds was that of a man standing in a river with fish and vegetation around him.

Among the structures exposed in the Malwa levels the most interesting was the 'religious complex'. It comprised, besides the residential houses or rooms closely connected with the complex, a large mud platform with a channel cut into it and ending in a soak-pit meant to be used for ablution purposes, and six or seven types of sacrificial altars including an apsidal mud-wall structure, perhaps a sacrificial temple, an altar comprising a series of mud rings, a heart-shaped altar, an oval-shaped altar with a sunken floor, an oval-shaped altar with rounded sides, a rectangular altar and a U-shaped fire-pit.

The floors of the Malwa houses were decorated with potsherds by embedding them either on edge or flat. Each of the exposed houses had a low step of mud at the entrance, one of them being semicircular in shape, recalling the *candra-silā*.

The Jorwe Ware of the lower levels of Phase V, with all its characteristic types and painted designs, was deep-red in colour and had a shining surface showing resemblance with the Lustrous Red Ware [11.9]. But this was because of the natural outcome of the transition from the Malwa Ware to the Jorwe Ware and there was evidence neither of the true Lustrous Red Ware nor of the stemmed bowl of RANGPUR II C type in the Jorwe Phase at Daimabad or for that matter in any other level. The painted marks or the so-called potter's marks on the Jorwe Ware occur only singly, barring one example, and many of them do not have any parallels in the list of the

Indus signs [20.4.1]. The associated wares were the burnished grey ware and the thick coarse handmade ware.

Five structural phases, 1 to 5, were exposed in the Jorwe levels. The houses of Phase 4 were circular huts with a road and a lane, whereas those of the rest were either rectangular or square. Important structures of the Phase I included two potter's kilns, an apsidal sacrificial temple, a crescentic mud structure, perhaps a sacrificial altar, a circular ash-pit connected with rituals relating to children, and mud-wall houses among which one 7 m long and 3.5 m broad, was an interesting example. The largest among the houses was found in Phase 2 (House 38), which originally measured 9 m long and 5 m broad. It had five major floor levels and with each successive floor level the size of the house shrank. One of the potter's kilns, which was fully exposed, measured 5 m square and consisted of a platform, an outer mud wall 1.40 m high and 50 cm broad at the base tapering upwards to 15 cm, the central ash-packing serving as an insulator and the inner thin burnt wall of laminar clay. The kiln was filled with fine gravel used for artificially raising the temperature in the kiln. It had two stake holes. The kiln was divided into two compartments and on the floor of one were found 15 crushed pots. The different painted marks occurring on the Jorwe pots from the kiln suggest that they cannot be considered as 'potter's marks', as has been generally held. A huge jar of handmade ware found close to the kiln had profuse applied decoration of arch designs, human and bull figures and reptiles.

Among the important finds from the Jorwe Phase were included a unique terracotta covered with a coat of red ochre, consisting of the figure of a deified sage and his three consorts united with him and a cylinder seal of terracotta showing a scene of procession through jungle, a horse drawing a cart, followed by a deer looking majestically at the back and in front an animal with a long neck, perhaps a camel.

The ^{14}C dates of samples from the different phases at Daimabad are as follows: (i) overlap between phases IV and V, 1370 ± 100 B.C.; (ii) topmost layer of Phase IV, 1390 ± 120 B.C.; (iii) Phase III, 1120 B.C.; (iv) Phase II, A.D. 540; (v) Phase II, 1760 ± 210 B.C.; (vi) Phase III, 1550 ± 140 B.C.; and (vii) Phase I, 1540 ± 220 B.C.. The date around 1400 B.C. for the end of the Malwa and the beginning of the Jorwe arrived at from samples (i) and (ii) appears consistent with the date obtained for the beginning of the Jorwe at INAMGAON. Sample (iv) was collected from the slope and silt deposited in a later rain gully and is suspected to be contaminated. The date of sample (v) is near to what was expected (1800 B.C.) for the upper levels of the late Harappa phase on grounds of Daimabad stratigraphy, and of the date of the beginning

of the Malwa in Maharashtra as known at INAMGAON (c. 1600 B.C.); it is also consistent with the date of sample (ii). The dates of samples (iii), (vi) and (vii) are inconsistent.

Agrawal, D.P., Krishnamurthy, R.V., & Kusumgar, S., 1978, in *Man & Environment*, 2. Dhavalikar, M.K., 1979, paper read at Srinagar Seminar on Harappa Civilization (in press). Rao, S.R., 1978, in *Illustrated London News*, April, pp. 74-5. Sali, S.A., 1979, paper read at Srinagar Seminar on Harappa Civilization (in press).—M.N. DESHPANDE & S.A. SALI

Daimanhal, Dt Gulbarga. Megalithic site with chamber tombs enclosed in ash circles [4.17.8].

Jour. Geological Survey of Hyderabad, 4, 1, p. 157. Paddayya, K., 1973, *Investigations into the Neolithic Culture of the Shorapur Doab, s. India*, Leiden, p. 52. Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, p. 52.

Dainihill, Dt Mirzapur. Microliths [4.5].

IAR 1962-3.

Dalthangunjale, Dt Ahmadnagar. Tools of Series II (Middle Palaeolithic [4.3]) and microliths [4.5], possibly a factory site.

IAR 1960; 1966-7.

Dakacha, Dt Indore. Ancient site.

IAR 1970-1.

Dala-Chak, Dt Gurdaspur. Early historical remains. See ACHAL-SAHEB.

IAR 1961-2.

Dalband, Dt Almora. Two rock-shelters [13] on the banks of the river Suyal near village Dalband, 20 km from Almora. On circumstantial evidence the paintings in the rock-shelters have been dated to prehistoric times.

Agrawal, D.P., & Joshi, M.P., 1978, in *Man & Environment*, 2, pp. 75-7.

Dalippur, Dt Mainpuri. PGW [11.14], NBPW [11.16] and red ware site.

IAR 1971-2.

Dalmi, Dulmi, Dt Manbhum. Ancient burial ground containing a number of graves formed mostly of large slabs of rough stone set on four rude pieces of stone set upright in the ground.

ASI—AR, 8, pp. 186-8. Dalton, E.T., 1855, in *Jour. Asiatic Soc. Bengal*, p. 211; 1866, *ibid.*, p. 190.

Dalpat, Dt Jammu. Late historical pottery and Gupta terracottas.

IAR 1962-3.

Damari, Dt Ranchi. Microliths [4.5].

IAR 1965-6.

Damla, Dt Ambala. PGW [11.14] site.

IAR 1963-4.

Damnagar, Dt Amreli. Late historical site. Earlier Neolithic cores had been reported.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras; IAR 1969-70.

Damoh, Dt Damoh. Pointed-butt polished stone axes.

AI, 17, 1961, pp. 5-36.

Danavulapad, Dt Cuddapah. Situated on the left bank of the river Pennar about 7.5 km below the Taluka town of Jammalamadugu, the site has Jaina remains.

ASI—AR 1905-6.

Danawasni, Dt Marwar. Site on the river Reria with Series II (Middle Palaeolithic [4.3]) tools.

IAR 1958-9.

Dandauli, Dt Saharanpur. Śunga-Kushan and medieval wares.

IAR 1964-5.

Dand-Bichhia, Dt Mandla. Middle Stone Age (Middle Palaeolithic [4.3]) tools and microliths [4.5].

IAR 1963-4.

Dandgihalli, Dt Dharwar. Early historical site. See ANVERI.

IAR 1959-60.

Dangalpara, Dt Birbhum. Microliths [4.5].

IAR 1963-4.

Danguapasi, Dt Keonjhar. A large number of microliths [4.5] mostly on chert and flint, cores and waste flakes were found together with a Neolithic celt [4.6.4].

IAR 1958-9.

Danpur, Dt Bulandshahr. Red ware of the Śunga-Kushan period and medieval ware.

IAR 1970-1.

Daojali Hading (25°26'; 90°10'), Dt N. Cachar Hills, located on a low ridge of Tertiary sandstone which rises to a height of about 450 m above mean sea level. Covered with a dense forest of bamboo, the site, a large part of which is eroded away, with the resultant exposure of ground and polished stone tools, was explored and excavated by the writer during 1961-3. In 1961 a test pit measuring 3.60 × 0.75 m was dug in order to determine the stratigraphic and cultural sequences of the site. In 1963 four regular trenches, each measuring 3.60 m sq, were excavated; one of them, B, showed a regular series of deposits. In other trenches the top layers were seen to have been washed off, removing the cultural layers completely or partially. The cuttings dug down to a depth of 1.50 m exposed three layers: 1, dark loose earth, 20 to 30 cm in thickness, culturally sterile; 2, 75 cm in thickness, dark grey and comparatively loose in the upper part and relatively compact in the lower, archaeologically very rich, bearing stone tools of various types and potsherds; and 3, excavated to a depth of 45 cm, yellowish-brown compact earth, culturally barren, natural soil. A number of potsherds were found at the junction of layers 2 and 3 indicating that the first neolithic [4.6.6] occupation of the site took place on the top of the compact brown earth of layer 3. There is thus a single cultural horizon, with a depth of 20 cm to 1 m over the natural soil.

The excavated finds consist of stone implements and pottery, with no metal objects. While 65 stone implements were recovered from the excavation, 77 were collected from the eroded surface of the site and 60 in their stratigraphic context from the exposed face of a road-cutting. All the artefacts recovered from the three

different contexts exhibit a remarkable homogeneity in their types and technique of manufacture and can be safely regarded as belonging to one and the same cultural assemblage.

The implements can be classified as follows: (1) edged or cutting tools, 32, (2) grinding stones, 22, (3) querns and mealing troughs, 4, (4) mullers and stone rubbers, 6, and (5) quartzite pebbles (utilized), 11.

Most of the edged tools are made on indurated carbonaceous shale, and a few of them are on sandstone and fossilwood. The raw material for other categories of artefacts is a variety of fine-grained sandstone. The edged tools are made by flaking and grinding. That the tools were manufactured at the site is indicated by the grinding stones and chips found at the site. Technologically they fall into three main groups: (1) flake tools represented by a solitary example of a thin leaf-shaped flake of indurated shale, (2) edge-ground tools, represented by four specimens on sandstone made wholly by flaking and finished by grinding at the cutting edge, and (3) fully ground tools, forming the majority of the tools found in the excavations shaped by very fine flaking and finished by grinding all over the surface and edge. The tanged or shouldered celts and the quadrangular adzes with flat sides were also made by this process. There is no sign of sawing by metal wire of any tool. The majority of the stone tools is small in size, the length varying between 2.9 and 5.9 cm. In some cases the breadth of the tool is greater than the length, an unusual feature resulting from frequent resharpening.

typologically the tools may be classified into three main types: (1) tanged or shouldered celts, (2) small celts, and (3) quadrangular axes and adzes, their frequency of occurrence being 38.6, 29.5 and 31.9 per cent respectively. Among the shouldered celts the roughly shouldered curvilinear variety is more in number than the square-cut rectilinear variety. The small celts are either oval or triangular in shape. The quadrangular type is characterized by faceted lateral sides which are ground flat. Most of them are medium-edged axe type, and a small percentage belongs to the unibevelled adze type.

The pottery from the excavation is in the form of small sherds. About 95 per cent of the sherds are handmade, coarse, grey or dull-red, often gritty, cord-impressed and basket pattern beater-impressed. The remainder is either coarse and grey, with incised herring-bone decorations or brick-red made of fine clay with plain surface.

The excavated grinding stones were used for grinding, smoothening and sharpening the stone axes and adzes. The mealing troughs, querns, mullers and stone rubbers are indicative of the food habits of the people who might have cultivated and consumed cereals.

The Neolithic assemblage of Daojali Hading is remarkable, but a closely comparable assemblage has been found in a stratified context at SARUTARU in Dt Kamrup by S.N. Rao. Although some of the tool types, viz. the shouldered and 'small celts' with flat sides, are sparsely distributed in Bengal-Bihar and Orissa, no assemblage similar to that of Daojali Hading has been reported from other parts of India. On the other hand the assemblage consisting of shouldered celts, quadrangular axes and adzes and corded wares shows close affinities with the Late Neolithic cultures of s.-e. Asia and s. China. No ^{14}C date is available.

Allchin, F.R., 1962, in *Bull. School of Oriental & African Studies*, London, 25, 306-30. Goswami, M.C., & Sharma, T.C., 1962, in *Jour. Univ. of Gauhati*, 13, pp. 63-6; in *ibid.*, 14, pp. 45-7. Rao, S.N., 1973, in *Bull. Dept. of Anthropology, Dibrugarh Univ.*, 2, pp. 1-9. Sharma, T.C., 1966, *Prehistoric Arch. of Assam—a Study of Neolithic Culture*, Ph.D. thesis (unpublished), Univ. of London; 1967, in *Man*, N.S., 2, pp. 126-8.—T.C. SHARMA

Daoni, Dt Jhansi. Palaeolithic (of unspecified nature) site.

IAR 1963-4.

Dapur, Dt Dhule. Late Stone Age (Mesolithic [4.5]) tools.

IAR 1962-3.

Daradgaon, Dt Ahmadnagar. Tools of Series II (Middle Palaeolithic [4.3]) and microliths [4.5] were found together with early historical pottery characterized by the black-and-red and red wares.

IAR 1960-1.

Darapur, Dt Bharatpur. Site yielding PGW [11.14], black-and-red ware and Kushan terracotta figurines and sculptures.

IAR 1970-1.

Darasol, Dt Purulia. Microliths [4.5].

IAR 1959-60.

Darauli, Dt Udaipur. Early Stone Age (Lower Palaeolithic [4.2]) tools were found as also black-and-red ware unassociated with microliths. The ware born a family likeness to the Chalcolithic pottery found at AHAR² [11.6.2]. The usual shapes comprised: the convex-sided bowl with a flared or everted rim and sometimes with a flanged shoulder; straight-sided bowl with an everted rim; bowl with a carinated shoulder and everted rim; and jar with a flared mouth. The pots were generally painted externally and occasionally internally in various designs with a whitish pigment; the designs consisted of vertical and oblique strokes, concentric circles, chevrons, dots and intersecting arcs. Besides sherds of polished red ware and burnished black ware were also found in ample quantities.

IAR 1956-7; 1962-3.

Darebora, Dt N. Kachar Hills. Forty-two pear-shaped stones were found near Darebora arranged in lines with a single enormous stone at a small distance. See BOLASON.

Hutton, J.H., 1929, in *Antiquity*, 3.

Darga, Dt Cuddapah. Early, Middle and Late Stone Age (Lower and Middle Palaeolithic [4.2.3] and Mesolithic [4.5]) tools were found.

IAR 1964-5.

Dargama, Dt Ranchi. Five copper celts were found near a water channel [4.11].

Jour. Bihar & Orissa Res. Soc. 1, 1915, p. 239; 6, 1921, p. 417.

Dargarh, Dt Jabalpur. Series I and II (Lower and Middle Palaeolithic [4.2, 3]) tools.

IAR 1958-9.

Daria, Dt Allahabad. Painted rock-shelters [13].

IAR 1969-70.

Dariyapur, Dt Unnao. PGW [11.14] and NBPW [11.16] site.

IAR 1962-3.

Darkhel, Dt Dhule. Late Stone Age (Mesolithic [4.5]) and Chalcolithic [4.14.6] site.

IAR 1963-4.

Daroda, Dt Wardha. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1959-60.

Darogi, Dt Bellary. Ash mound [4.3] and Chalcolithic [4.17.8] site.

Paddayya, K., 1973, *Investigations into the Neolithic Culture of the Shorapur Doab, s. India*, Leiden, fig. 29.

Daroji, Dt Bellary. Palaeolithic [4.2, 3] and Neolithic [4.6.9] site.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, pp. 77-8.

Darori, Dt Jabalpur. Middle Palaeolithic [4.3] site.

IAR 1968-9.

Daruharu, Dt Ranchi. Microliths [4.5].

IAR 1960-1.

Dasehra, Dt Bulandshahr. Sunga-Kushan red ware.

IAR 1964-5.

Daspalla, Dt Puri. Neolithic [4.6.4] site.

AI, 9, 1953, p. 97.

Dasuya, Dt Jullundur. Traces of early historical occupation were found on a mound.

IAR 1956-7.

Data, Dt Hissar. Pre-Harappa [4.8] site comparable to the degenerate SISWAL.

Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 124.

Datarti, Dt Dhule. A crude handaxe [4.2] was found on a consolidated gravel of the Panjhara. Artefacts ascribable to a stage succeeding the Middle Stone Age (Middle Palaeolithic [4.3]) but preceding the Late Stone Age (Mesolithic [4.5]) were also discovered.

IAR 1964-5.

Datarwa, Dt Ujjain. Early historical site.

IAR 1971-2.

Datrana, Dt Banas-Kantha. Painted red ware.

IAR 1964-5.

Dattawadi, Dt Pune. Chopper-chopping tools [4.2].

IAR 1962-3.

Daudpur, Dt Saharanpur. Harappa [4.9] and OCW [4.12] site.

IAR 1966-7.

Daulatabad¹ (Husainabad), Dt Bijnor. Sherds of the PGW [11.14] were found at Daulatabad, 16.5 km from Najibabad on the left bank of the Gangan river. The site also yielded NBPW [11.16] besides punch-marked and cast copper coins [3.1].

IAR 1957-8.

Daulatabad², Dt Ganganagar. PGW [11.14], impressed pottery, Rang Mahal Ware [11.24], toy-cart, terracotta balls and shell bead and bangles at Daulatabad-1 and -2. See SARASVATI VALLEY.

Unpublished.

Daulatpur¹, Dt Ghazipur. Historical site.

IAR 1962-3.

Daulatpur² (29°57'; 76°56'), Dt Kurukshetra, on a nullah branching off from the Chitang (Drśadvati), 15 km e. of Thanesar, with a 6 m high mound, excavated by the Univ. of Kurukshetra during 1968-70 (IAR 1968-9, p. 8) and again during 1976-8, on the latter occasion to ascertain if there was an overlap between the late Harappa [4.10] and PGW [4.15] cultures noticed at BHAGWANPURA², only 8 km to its n. It may be at once said that no such overlap has been noticed in the excavated area. The excavation has revealed that the earliest deposit, Pd I, belongs to the late Harappa culture with five structural phases with post-holes, walls of mud brick and ill-fired brick of various sizes (52×36×10 and 42×32×? cm) suggest different types of building activities. Mud corn bins were in use for the purpose of storage. However the most significant discovery of these levels is the existence of walled constructions, round to oval in shape and burnt inside, most probably designed as ovens (*bhattis*). Their bottoms contain a thin layer of ash and are filled with thrown-off material, including pottery and animal bones, thus precluding their use for any religious activity. The ceramic industry mainly consists of a thick sturdy ware having red to oily surface. The pottery types are a mixed assemblage which includes pre-Harappa [11.2], Harappa [11.3] and Cemetery H types and are on the whole comparable with that of BARA. Incision of various geometrical designs is also a decorative technique in addition to paintings of simple designs in black colour. The other finds include: bangles, a chisel, a fish-hook and a razor-blade of copper; wheeled bird and animal figurines; toy-cart wheels [15.19]; beads, bangles and balls of terracotta; beads; bangles and balls with incised decoration in faience; a few steatite disc beads; bone engravers; shell bangles; and charred grains. Several terracotta circular and triangular cakes [6.27] and grinding and rubbing stones [6.19] have also been found. The charred grains recovered from the site are under study. The discovery of the copper fish-hook [6.6] and

bone engravers suggests that hunting and fishing supplemented the food supply of these people. On the basis of pottery and other finds these remains can be bracketed with those of SANGHOLI B, MITATHAL II B, MIRZAPUR, BHAGWANPURA² I A and BANAWALI III.

The overlying remains of Pd II having 1-10 m deposit in some of the excavated trenches yield the PGW in three structural phases. With the PGW are also coarse grey and coarse red ware and the Black-slipped Ware [11.13]. The types in the PGW are mostly the dish and bowl with paintings in black pigment. A few dishes show interesting painted motifs. The discovery of terracotta humped figurines, vase-shaped beads, ear studs, discs, toy-cart wheels and a piece of bone bangle form the other cultural equipment. The upper levels of the Pd have yielded two iron implements.

The early historical remains, Pd III, ranging in date from c. 500 B.C. to the 5th century A.D., are broadly divisible into two phases. The earlier phase is marked by the plain grey and other pottery of the early historical period of the pre-Christian era. The settlement during the later phase belonging to the centuries succeeding the Christian era seems to be well-planned, though the houses are constructed of mud brick. This later phase is also distinguished by the occurrence of the Red Polished Ware [11.23]. The associated ordinary red pottery is decorated with stamped designs like *nandipada*, leaves and garland designs. The other finds include: terracotta toys representing wheeled animals, bulls and other figurines, beads, wheels, balls, discs, spools and stamps; miscellaneous objects of iron; copper objects including bangles and ear rings; a few copper coins; beads of semiprecious stones, terracotta and glass; shell and glass bangles; a comb of ivory; and stone querns and pestles. A small terracotta figure bearing two *tri-sūla* symbols made by incised holes belongs to the early centuries of the Christian era. The most important of the finds are however the clay sealings [3.2] bearing legends in early Brāhmi script including a Yaudheya sealing and a bull figure; two sealings containing the legend *Sthānes-varasya* in characters of the 4th-5th century A.D.; a sealing depicting *svastika* and trident; and one bearing the impression of a ring and another depicting a cock.

A sprinkling of the remains of early medieval times including glazed ware is found in the top levels of the mound.

—U.V. SINGH

Dauli, Dt Birbhum. Black-and-red Ware characteristic of the MAHISDAL complex [4.14.4].

IAR 1963-4.

Daurala, Dt Meerut. Early historical site.

IAR 1969-70.

Davangaon. See PRAVARA VALLEY.

Dayarampura, Dt Jaipur. Black-and-red Ware site.

IAR 1970-1.

Dech, Dt Unnao. NBPW [11.16] site.

IAR 1962-3.

Deel-Chapper, Dt Ambala. Remains of the early Christian era including the Red Polished Ware [11.23].

IAR 1963-4.

Deen, Dt Ambala. PGW [11.14] and early historical wares.

IAR 1963-4.

Deevlakhara, Dt Bulandshahr. OCW [11.5] and medieval ware.

IAR 1970-1.

Degam, Dt Junagadh. Red Polished Ware [11.24].

IAR 1957-8.

Degaon, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1962-3.

Degapuri, Degapudi, Dt Nellore. Lower [4.2] and Middle Palaeolithic [4.3] site yielding Abbevillian and Acheulian hand-axes, cleavers, flakes, blade and endscraper. See KANDLERU VALLEY.

Aiyappan, A., 1942, *Manley Collection of Stone Age Tools*, Mem. ASI, 68, p. 4. IAR 1965-6.

Deghave, Dt Dhule. Late Stone Age (Mesolithic [4.5]) site.

IAR 1963-4.

Degras, Dt Ahmadnagar. Microliths [4.5].

IAR 1958-9.

Deharani, Dt Allahabad. Late Stone Age (Mesolithic [4.5]) site.

IAR 1963-4.

Dehare, Dt Ahmadnagar. Microliths [4.5].

IAR 1958-9.

Deheru, Dt Ludhiana. Harappa [4.9] site with typical Harappa Ware [11.3].

IAR 1961-2.

Dehgaon, Dt E. Nimar. Microliths [4.5].

IAR 1959-60.

Dehra¹, Dt Bharatpur. Black-and-red Ware [11.6], PGW [11.14] and NBPW [11.16] site, 15 km w. of Bharatpur.

Dehra² (31°53'; 76°14'), Dt Kangra. About 36 km s. e. of Kangra, Dehra stands on a terrace which is about 35 m above the level of the river. Palaeoliths [4.2] were discovered from a thick gravel bed constituting a part of this terrace. Of these ten were unifacial choppers and four were Clactonian flakes.

AI, 12, 1956, pp. 58-92.

Dehra-Gopipur, Dt Kangra. Lower Palaeolithic [4.2] and Neolithic [4.6.2] site in the BEAS VALLEY.

Mohapatra, G.C., 1966, in *Bull. Deccan College Res. Inst.*, pp. 221-37.

Dejuri, Dt Birbhum. Mesolithic [4.5] site.

Indian Antiquary, 14, 1885, p. 34.

Delbarh, Dt Midnapur. A shouldered celt of stone [4.6.4] was found.

IAR 1955-6.

Delcha, Dt Ujjain. A habitation site with microliths [4.5] and remains of historical periods.

IAR 1956-7.

Delchi Burzurg, Dt Ujjain. Early historical site.

IAR 1971-2.

Delchi Khurd, Dt Ujjain. Early historical site.

IAR 1971-2.

Delhi. See BADLI-KI-SARAI, LAL KOT, PURANA QILA, QILA RAI PITHORA, TIMARPUR.

Delsara, Dt Kutch. Historical site. See AJMEL.

IAR 1965-6.

Delvada, Dt Sabar-Kantha. Late Stone Age (Mesolithic [4.5]) site.

IAR 1969-70.

Denduluru, Dt W. Godavari. A habitation site with fine black-polished ware and red ware, seemingly Megalithic [11.15.3].

IAR 1958-9.

Deo-Markandeya, Dt Sahabad. Mound 'thickly covered with broken bricks and pottery, the latter being chiefly glazed with a shining black', perhaps referring to the NBPW [11.16].

ASI-AR, 16, pp. 59-61.

Deogaon, Dt Bolangir. Microliths [4.5].

IAR 1963-4.

Deogarh¹, Dt Jhansi. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAR 1961-2.

Deoghar², Dt Santal Parganas. Early Stone Age (Lower Palaeolithic [4.2]) tools were found in the bed of the river Karnakolajore.

IAR 1963-4.

Deoghat¹, Dt Allahabad. Middle Stone Age (Middle Palaeolithic [4.3]) tools comprising blades, flakes, scrapers and cores were collected from Deoghat on the river Belan, as also a stag-horn showing flake scars. Microliths [4.5] and Megalithic remains [4.17.3] also occurred.

IAR 1962-3. Misra, V.D., 1977, Some Aspects of Indian Arch., Allahabad, pp. 28, 43, 57.

Deoghat², Dt Chandrapur. Late Stone Age (Mesolithic [4.5]) site.

IAR 1969-70.

Deola, Dt Osmanabad. The site on the left bank of the river Manjra yielded Middle and Late Stone Age (Middle Palaeolithic [4.3] and Mesolithic [4.5]) tools.

IAR 1971-2.

Deolali, Dt Ahmadnagar. Chalcolithic [4.14.6] and early historical site.

IAR 1959-60.

Deoland Bridge. See DEVALONDH.

Deoli¹, Dt Bhilwara. Microliths [4.5]. See KURIAS.

IAR 1957-8.

Deoli², Dt Nagpur. Megalithic site with stone circles [4.17.6].

IAR 1970-1.

Deoli³, Dt Tonk. Site on the river Banas with Series I (Lower Palaeolithic [4.2]) tools.

IAR 1958-9.

Deolimet, Dt Nagpur. Megalithic stone circles [4.17.6].

IAR 1968-9.

Deopur¹, Dt Mandsaur. Two sites bearing black-on-red

painted pottery and microliths [4.14.5] were discovered in the vicinity of Deopur.

IAR 1957-8.

Deopur², Dt Mirzapur. Cairn circles and dolmenoid cists [4.17.3].

IAR 1962-3.

Deopura, Dt Tonk. Microliths and non-Megalithic black-and-red ware [11.6.2].

IAR 1958-9.

Deora, Dt Chhatarpur. Rock-shelters [13].

IAR 1955-6.

Deori¹, Dt Chittaurgarh. Microlithic [4.5] site. See BARA BEDLA.

IAR 1956-7.

Deori², Dt Jabalpur. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1959-60; 1963-4; 1968-9.

Deori³, Dt Sagar. Lower Palaeolithic [4.2] site on the Sukchain river.

Proc. Asiatic Soc. Bengal, 1867.

Deori-Sunwara, Dt Jabalpur. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1960-1.

Deoriya, Dt Basti. NBPW [11.16] site.

IAR 1962-3.

Deoti, Dt Lucknow. Copper celt [4.11].

AI, 7, 1951, p. 29.

Dera-Baba-Nanak, Dt Gurdaspur. Early historical remains. See ACHAL-SAHEB.

IAR 1961-2.

Desalpur (23°25'; 60°10'), Dt Kutch, located along the n.-w. edge of the Little Rann of Kutch, excavated in 1964 by K.V. Soundara Rajan (*IAR 1963-4*, p. 10). Prior to that microlithic blades and a lunate retouched along the arc reminiscent of the pre-Harappa microlithic industry had been found here (*IAR 1955-6*, p. 69). A site of modest dimensions, 130 × 100 m, situated almost midway between Mohenjo-daro and Lothal, on the n. bank of the dehydratory stream Bamu Chelo, its cultural deposit rising to a height of upwards of 3 m, its importance is fourfold. Firstly, it is a walled Harappa [4.9] town or outpost, not very extensive but significantly defended by a square massive stone wall reinforced by bastions, with an early historical (Rang Mahal) occupation [4.18.2]. Secondly, its lowest levels have yielded along with mature Harappa Ware [11.3] another ceramic of fine greenish-grey, wavy-painted (reserved-slip) pottery, which also occurs at SURKOTADA in bulk and displays more than a few pot types. Similar pottery seems to have been noted at Mohenjo-daro in fairly low levels and has been called the 'glazed ware'. Thirdly, the site has produced, apart from a steatite lettered Harappa seal and a similarly lettered terracotta sealing, a copper seal of the type known in good numbers from Mohenjo-daro but not from any Indian Harappa site. Lastly, in the devolution of the Harappa culture a new assemblage of

bichrome pottery suggests some similarities with the later Harappa elements of Saurashtra [4.10], as from ROJDI, PRABHAS PATAN, etc.

The fort-wall has a basal width of 4 m and rises to an extant height of 2.5 m. In the n.-w. corner of the wall is an additional feature—a mud-brick filling rising to a platform on the top, with stone veneer walls on its outer and inner sides. It is possible that originally the fort-wall might have been entirely or mostly of mud-brick and stone veneer and was specially reinforced by rubble—only in such parts of the wall as were strategically important. The stone blocks of the veneer are often of substantial dimensions, one particular lowest course block having been a beam more than 3 m long and 1.3 m high. Houses were constructed largely of stone slabs and blocks, but the use side by side of mud-brick, 50×25×12.5 cm, is also attested in the interior of the town. Baked brick is not much in evidence, the reason apparently being the easy availability of sandstone of well-laminated character in the geological formations all over Kutch. The location of the gateway entrance into the town is elusive, particularly since a great part of the town-wall on the south side has been eaten away by the periodic floods of the wild stream which acted as a defence but at the same time a threat to the town.

Three structural Sub-pds are noticed in the earlier part, I A, while the latter part, I B, starting with the bichrome pottery and a degenerate Harappa black-on-red ceramic, has not shown any structural remains. From the very lowest levels the Harappa ceramic showed all the known characteristic forms and painted patterns, although it might be stated that the range of the painted designs is limited. The wavy-painted greenish-grey 'reserved slip' ware, met along with the Harappa at the very lowest level, itself develops into a thicker ware with the wavy paintings now rendered in brownish pigment as well, both on the interior and the exterior of the dish type. Along with the Harappa, thick incised wares as also a coarse grey ware with bluish or reddish-brown horizontal bands rendered in the reserved-slip technique on a matted surface is also noticed. This ware appears to have its analogues at LOTHAL (Phase II) and ROJDI. The beginning of the bichrome ware also marks the first-noted occurrence of the grey-painted black-and-red ware although its incidence is restricted. Plain black-and-red ware was however found in plenty, side by side with the painted variety and the bichrome ware, the chief type in the latter being the bowl with a slightly everted rim and convex profile. The paintings are on the exterior upper part and comprise single motifs repeated or alternating pairs of motifs of series of vertical wavy line, concentric semicircles, vertical slashes, etc., there being no zoned patterns. They have a broad similarity with the late and post-Harappa wares in Saurashtra

[11.4], although the typical Lustrous Red Ware [11.9] is absent. The grey-painted black-and-red ware [11.6.2] is comparable with similar painted pottery from AHAR², where it has been dated to around 1500 B.C. Thus we seem to have an approximate age for the inception of the bichrome wares, and therefore of Sub-pd I B, and of the end of the mature Harappa culture. This would go well with the known span of the Harappa culture, notwithstanding the fact that a shorter Harappa chronology is now generally favoured. An interesting diagnostic type occurring in the earliest level and continuing in a modified form into the succeeding stages with a progressively shortening handle is the typical handled saucepan. However only a very few have a circular-sanctioned lug or rod-handle while most of them have a strap-handle form with the top curved for easy grip. The former stud-handle variety is known from LOTHAL and other sites in Gujarat.

The typical antiquities of the Harappa period include: triangular terracotta cakes [6.27], animal figurines and gamesmen [6.7.2], one of them with ram-head; beads of terracotta, faience, chalcedony etc., of globular, disc, segmented and gadrooned cylindrical shapes; copper objects including knives, chisels, rods and rings; jasper and terracotta weights [6.29]; microlithic blades, almond-shaped points; arrow types on chalcedony cores, one of them preserving a crested ridge along one of the margins; saddle querns and pestles [6.19]; polished celts; and cart wheels and frames of terracotta. The most noteworthy finds are two script-bearing seals, one of steatite and the other of copper, both of diminutive rectangular size with a vertical hole at the converging rear part, and a terracotta sealing also with letters. The larger excavation at SURKOTADA in e. Kutch has fully confirmed the representative character of Desalpur stratigraphy and finds.

Over the Harappa remains and separated from them by a debris layer indicating a desertion of the site is a deposit less than 1 m thick, which represents the early historical occupation of the Rang Mahal complex.

Rao, 1973, also in *AI*, 13 and 19, 1962 and 1963, p. 191, is of the view that the Harappa culture diffused into Gujarat by the sea route, the presence of the dockyard at LOTHAL supporting his view. Some sites explored by him in Kutch and duly identified as belonging to the Harappa were taken by him as having no great bearing on the main pattern of Harappan movements. The long voyage from the Indus delta to LOTHAL would have left Harappa marts and settlements along the Gujarat coast, but the types of sites on the coast are consistently of the late Harappa context [4.10]. The most important of such coastal sites is PRABHAS PATAN, but the main character of the Prabhas Ware [11.8] makes it para-Harappa rather than being coeval with the mature Harappa. Sites

like Desaipur actually show that a land route between the Indus delta and Gujarat was definitely exploited by the Harappans.

Joshi, J.P., 1972, in *Jour. Oriental Inst.*, 22, pp. 98-144. Rao, S.R., 1973, *Lothal & the Indus Civilization*, Bombay.—K.V. SUNDARA RAJAN

Deshirvadi, Dt Dhule. Late Stone Age (Mesolithic [4.5]) tools.

IAR 1962-3.

Desihalli, Dt Kolar. Megalithic burial [4.17.8] site.

IAR 1969-70.

Desvandi, Dt Ahmadnagar. Microliths [4.5].

IAR 1958-9.

Deta, Dt Kutch. Middle Palaeolithic [4.3] site.

IAR 1967-8.

Deuldanga, Dt Bankura. Black-and-red Ware [11.6.5] site.

IAR 1965-6.

Deuli, Dt Birbhum. Early historical site yielding an e. form (?) of the NBPW [11.16] and a silvery grey ware of comparable shapes.

IAR 1963-4; 1965-6.

Deulpota¹, Dt Bankura. Tools of the Middle Stone Age (Middle Palaeolithic [4.3]) and of an earlier complex were found.

IAR 1966-7.

Deulpota², Dt 24-Parganas. Middle Stone Age (Middle Palaeolithic [4.3]) tools comprising unifacially worked subtriangular points, borers, side scrapers and hollow scrapers. An interesting feature of the tools is their diminutive form which may be due either to the size of the available chert nodules on which they are worked or to a special character of the lower Ganga Middle Stone Age industries. Sherds of the Rouletted Ware [11.21] were also recovered.

IAR 1963-4; 1964-5; 1965-6. Dasgupta, P.C., 1966, *Exploring Bengal's Past*, Calcutta.

Deur, Dt Bijapur. Microliths [4.5].

IAR 1962-3.

Devachandpur, Dt Ghazipur. NBPW [11.16] site.

IAR 1959-60; 1962-3.

Devagana, Dt Ahmadabad. Harappa [4.9] site.

IAR 1966-7.

Deva Kachar, Dt Narsinghpur. A few late Acheulian [4.2] points in association with fossil bones were found on the banks of the rivers Varureva and Sher near Deva Kachar.

IAR 1960-1; 1964-5; 1972-3.

Deval, Dt Junagadh. Red Polished Ware [11.23].

IAR 1957-8.

Devalgi, Dt Bijapur. Early historical site yielding Black-and-red Ware [11.15.3] and Russet-coated Painted Ware [11.22].

IAR 1962-3.

Devalio, Dt Bhavnagar. Harappa [4.9] site in the Kalubhar valley.

IAR 1960-1.

Devaliyo, Devalia (21°52'; 71°25'), Dt Amreli. Site situated on the right bank of the Bhadar river. At the bottom are two gravel deposits. The upper one underlying a *kankar* deposit yielded microliths [4.5]. Triangles, points, flake-blades and discoid scrapers from the microlithic tool assemblage. Separated from the microlithic layer by a calcareous deposit is the late Harappa material [4.10]. Red and buff wares of RANGPUR II B type are found in the early and the Lustrous Red Ware [11.9] in the late levels of this deposit.

IAR 1955-6; 1956-7. AI, 18 & 19, 1962 & 1963, p. 205.

Devalka, Dt Rajkot. Early historical site near Sultanpur.

IAR 1958-9.

Devalondh, Deoland, Dt Rewa. Early, Middle and Late Stone Age (Lower and Middle Palaeolithic [4.2,3] and Mesolithic [4.5]) tools were collected from the bed of the Son near Devalondh bridge on the Rewa-Amarkantak road.

IAR 1957-8; 1961-2.

Devanahalli, Dt Bangalore. Cists and stone circles [4.17.8] were found on both sides of the road leading to Devanahalli.

IAR 1960-1.

Devanathapattinam, Dt S. Arcot. Megalithic Black-and-red Ware [11.15.3].

IAR 1965-6.

Devanganahalli, Dt Kolar. Megalithic burial [4.17.8] site.

IAR 1969-70.

Devangaon. See PRAVARA VALLEY.

Devanur, Dt S. Arcot. Megalithic site with a large group of dolmens and stone circles [4.17.9].

Indian Antiquary, 5, 1876, p. 159. Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Devapur, Dt Gulbarga. Middle Stone Age (Middle Palaeolithic [4.3]) site on the left bank of the river Krishna. See DON RIVER.

IAR 1967-8; 1968-9.

Devarahalli, Dt Mysore. Russet-coated Painted Ware [11.22].

IAR 1960-1.

Devarapalem, Dt Nellore. Middle Palaeolithic [4.3] site. *Mem. ASI*, 68, p. 5.

Devdhar (22°07'; 71°09'), Dt Rajkot. Late Harappa [4.10] site corresponding to RANGPUR II B and II C.

AI, 18 & 19, 1962 & 1963, p. 205.

Devendavaccum, Devendavakkam, Dt Chingleput. Lower Palaeolithic [4.2] site on the river Kortalayar.

Footte, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 172.

Devhala, Dt Dhule. Microliths associated with ochre-coloured pottery [4.14.6]. See DHAMDAI.

IAR 1957-8.

Devihal, Dt Dharwar. Megalithic cist circles [4.17.8].

IAR 1961-2.

Devikapatnam, Dt Tirunelveli. Prehistoric site.

ASI—AR 1936-7. *Gazetteer of Tinnevely Dt.*, p. 409.

Devisar, Dt Kutch. Lower Palaeolithic [4.2] and early historical site.

IAR 1967-8; 1969-70.

Devkali, Dt Ghazipur. Historical site.

IAR 1962-3.

Devla, Dt Nasik. Late Stone Age (Mesolithic [4.5]) site.

IAR 1965-6.

Devnimori (23°39'; 73°26'), Dt Sabar Kantha, on the bank of the Meshvo, with scattered and varied remains of several periods, now submerged in a water reservoir. It was excavated by the M.S. Univ. of Baroda during 1960-2.

On the wind-borne loessic dunes scattered in the area Mesolithic tools [4.5] of agate, chert, chalcedony and other materials were obtained. Two sites Dhenk Vadlo and a site near the Buddhist settlement were excavated. The typology of the tools is similar to that from the other sites from Gujarat.

A Buddhist settlement was located in an open area on the left bank of the Meshvo. It consisted of two *vihāras*, a *stūpa*, four votive *stūpas*, a *caitya*, halls of indeterminate use and a compound wall enclosing the settlement.

The largest monument is the 30-room *vihāra* of the *catuṣśāla* type, built on a raised platform with a flight of steps on the n. giving access to the main entrance. It was set a little on the inner side of the platform, which gave an open veranda all round the *vihāra*. The rooms were arranged symmetrically on all sides. The n. entrance opened upon a courtyard with possibly an open veranda on which the rooms of the *vihāra* opened, with special arrangements for the corner rooms. At a level lower than that of the veranda was a large open courtyard. Drains were provided for the removal of water from this courtyard. On the s.-w. side was a raised *vyākhyāna-pīṭha* (sermon altar). The *vihāra* was repaired several times. The refuge heaps lying around the *vihāra* revealed several classes of ceramics including the amphora [11.19] and Red Polished Ware [11.23].

Vihāra 2 was at a distance of about 150 m to the e. of Vihāra 1, of which it was a small replica.

A fine brick *stūpa*, 28 m sq, was constructed to the n. of Vihāra 1. Called *mahā-stūpa* in an inscription, it had an extant height of 11.27 m and had a highly decorated base with different mouldings with decorated pilasters dividing it into ten panels. The top moulding also had decorated bricks in its construction. On the base ran all round a passage about 2.5 m wide. From the inner side of the passage the *stūpa* rose in two tiers. The lower one had plain mouldings with decorated brick arches which had stucco images of Buddha in them. This as well as the upper parts were in a highly dilapidated condition and indicated several repairs. The core of the *stūpa* showed the existence of 140 courses of brickwork. Prior to the

raising of the structure the uneven ground was levelled and strengthened. The bricks from the core indicate that discarded decorated brickwork as well as images of Buddha were used in its construction.

The base had 35 brick courses, below which an unfinished casket with ash was obtained. On the 35th course a globular pot containing eight silver Ksatrapa coins, the latest being that of Viśvasena, a gold foil and fragments of a blue glass bottle were obtained. On this pot a small brick *stūpa* was erected and was enclosed within the general brickwork. Fourteen courses of this work could be traced.

On the 93rd course the junction of the main body of the *stūpa* and its *anda* was traced. Here an inscribed casket [12.8] of schist placed in a broken pot and covered by two courses of brickwork was located. The courses on the *anda* showed several designs like volutes, *pipal* leaf, circle circumscribing a rectangle, etc. On the 115th course of the brickwork a seated figure of Buddha facing e. was placed in the core of the *stūpa*. It was enclosed in eight courses of brickwork.

The casket had two inscriptions. The lid carried the *Pratītya-samutpāda* text and the body of the casket an inscription with the date 127 in the Kathika era. It says that this Mahā-stūpa was built near the Mahā-vihāra when the ruler Rudrasena was ruling. Sādhu, Agni-varman and Sudarśana were responsible for the work and that the casket contained the relics of Daśabala, i.e. Buddha. The relics (a small quantity of ash) were placed in a gold bottle in a copper box that was protected by the stone casket.

Four votive *stūpas* of simple construction were seen on the w. of the Mahā-stūpa. Only a few courses of these structures were found surviving. An apsidal *caitya* with its entrance facing w. lay between the Mahā-vihāra and the Mahā-stūpa.

A wall of rubble protected this important settlement on the n. and w. Its heavy construction was on the riverside for flood protection.

Several temples with *lingas*, Gaṇeśa and other deities were traced in the area. One of them which was excavated indicated that the cella of the earlier temple had been destroyed. Its bricks showed contemporaneity with the Buddhist settlement.

Eighteen earthworks of varying lengths ranging from 70 to 300 m and heights from 2 to 3 m were traced in the area. Of stone, brick and earth, they were in a series over natural streams or were in isolation. Though they were in ruins, the bricks used in them as well as the images lying on their sides indicated that they were built during the early historical period when the Buddhist monastery and temples were constructed.

Mehta, R.N., & Chowdhary, S.N., 1966, *Excavation at Devnimori, Baroda*.—R.N. MEHTA

Devergaon, Dt Bastar. Middle Palaeolithic [4.3] site.

Madhya Pradesh Sandesh, 13 June, 1970, p. 10.

Devunipalli, Dt Karimnagar. Mesolithic [4.5] site.

Gururaja Rao, B.K., ed., 1978, *Decade of Arch. Studies in s. India*, Dharwad, p. 49.

Devur, Dt Bijapur. Thick coarse grey ware with ribbon flakes of chert [4.14.8].

IAR 1958-9.

Dhaba, Dt Udaipur. Microlithic [4.5] site in the Berach valley.

IAR 1962-3.

Dhabaoli, Dt Sidhi. Tools of the Early and Middle Stone (Lower and Middle Palaeolithic [4.2, 3]) Ages.

IAR 1962-3.

Dhablapada, Dt Dhule. Open camp site with Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1961-2.

Dhadne, Dt Dhule. Microliths and sometimes neoliths were found in association with the black-on-red painted pottery. Alongside was also found a coarse grey ware similar to that from the Chalcolithic levels at BRAHMA-GIRI and BAHAL [4.14.6]. The Chalcolithic culture was superimposed successively by cultures with the typical Black-and-red Ware [11.15.2] and a coarse red-slipped ware, the latter being assignable to the Sātavāhana period.

IAR 1957-8.

Dhadra, Dt Surat. Early, Middle and Late Stone Age (Lower [4.2] and Middle Palaeolithic [4.3] and Mesolithic [4.5]) site.

IAR 1967-8.

Dhajawa Pahar, Dt Palamau. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1970-1.

Dhaka, Dt Shahjahanpur. Copper Hoard [4.11] site situated on the right bank of the Madnapur Minor branch of the Sharda canal, some 10 km s.-w. of Jilhar.

AI, 7, 1951, p. 20. *IAR* 1965-6.

Dhakal, Dt Jind. Ceramic complex comprises SISWAL pottery, late Harappa pottery [11.4] and PGW [11.14].

Suraj Bhan, & Shaffer, J.G., 1978, in *Man & Environment*, 2, p. 62.

Dhala-Taur, Dt Bhagalpur. Microliths [4.5].

IAR 1963-4.

Dhalbhum area, (roughly 22°17' to 23°0'; 86°03' to 86°53'), a subdivision Singhbhum Dt, rich in archaeological finds along with other parts of that Dt.

Lower Palaeolithic cultures: The Palaeolithic sites where some systematic sectional work has been done are nine in number, viz. GALUDIH, JAGANNATHPUR, TUMANG, DUNGRI, DAHIGARA, GOPALPUR, AMAI-NAGAR, LOKJURIA, KHARSOTI and NARSINGHGARH (all lying within 22°30' to 22°39'; 86°23' to 86°31'), being on the bank of the Subarnarekha except Narsingharh, which is a few km away from the main river. The general Pleistocene [9.7.2] stratigraphy of Dhalbhum as worked out by Ghosh, 1970, along with the Lower

Palaeolithic cultures [4.2] is given in the following table.

Geological periods	Geological formations	Cultural elements
Holocene	Recent deposits	Microliths
Upper	Upper clay	(1) Flake-blade (2) Flake
Middle	Secondary laterite	(3) Chopper and biface
	Mottled clay	?
Lower	Compact secondary pebble laterite	

As shown in the table the three main industries are; (1) flake-blade industry at the top consisting of scrapers, points, blades, knives, cores or flakes. Below the flake-blade industry is (2) flake industry of scrapers, hand-axes, points, borers and cores. And at the bottom is (3) chopper and biface industry with choppers, handaxes, cleavers, scrapers, worked flakes and unclassified bifaces. The raw material for both the flake-blade and flake industries is mainly chert, jasper, chalcedony, flint, etc., while quartzite is the raw material for the chopper and biface industry. The Lower Palaeolithic cultures of Dhalbhum are homotaxial with those of the other parts of Singhbhum.

Microlithic and Neolithic cultures: These have been found as surface finds at various places between Talsa (22°42'; and 86°11' and Turamdih (22°43'; 86°12'). The microliths are of various types made on chert, jasper, flint, etc. The Neolithic types are chipped and ground celts, chisels, ring-stones, mortars and pestles made of fine-grained igneous rocks.

Ancient copper and gold working: Many ancient copper working sites have been reported from Dhalbhum. Murray, 1940, reported ancient copper shafts from HARTOPA (22°42'; 86°16') on both sides of the Garra Nala, RAKHA MINES (22°38'; and 86°22'), and other places. He had described an old circular shaft and a furnace from GARADI (22°43'; 86°14'). According to scholars the latest period of such workings was between the 3rd and 6th centuries A.D. Copper Hoards [4.11] from the adjoining Dts Mayurbhanj and Ranchi might have some connections with these ancient centres of copper production. Collection of minute particles of gold by washing the sands of the Subarnarekha had been reported by early observers in the later part of the 19th century.

Urn burials: From the south of Garadi near Dadi Nala Murray, 1940, reported a cemetery consisting of twelve urn burials. The urns are made of micaceous clay,

their shape and size indicating that they are not of the present-day type. The pots are 25-40 to 30-48 cm high and 30-48 to 35-56 cm wide at their maximum, while the necks vary between 10 and 15 cm in width with distinctive stroke marks. Their lids are of two kinds, one like an ordinary bowl and other with concave sides and small flat bases, their average size being 20 cm in diameter and 10 to 13 cm in depth. Except broken bones, some of which seemingly being very slightly charred, some teeth and some oxidized pieces of copper from one urn nothing was found in them. The age of these finds is unknown. But an urnburial recovered from Rakha Mines contained a Kushan coin.

Ancient structural remains: They include the ruins of RUAMGARH situated on a spur (22°37'; 86°24') that runs n. from Sideshar peak. Only a part of circular brick-built watch tower and remains of walls of brick, 26 × 15 × 7 cm and 51 × 26 × 74 cm, straw-tempered and lightly burnt, have been reported. The age of these ruins is not known. Ruins of old shrines have been reported from some places.

Stone beads: Some rounded or flattened beads perforated from both the ends, of carnelian, agate and onyx were found near the crossing (22°41'; 86°12') of the present railway line with the road from KUDADA (22°42'; 86°13') and from KUNDARKOCHA (22°30'; 86°15'). Such beads have also been reported from other parts of Singhbhum. But it was a living industry till the early part of this century according to the old inhabitants (1940).

Ball, V., 1869, *Proc. Asiatic Soc. Bengal* (for copper mining). Ghosh, A.K., 1970, in *Transactions of the American Philosophical Soc.*, N.S., 60. Murray, E.F.O., 1940, in *Jour. & Proc. Royal Asiatic Soc. Bengal*, 6.—G.S. RAY

Dhaliara, Dt Kangra. Palaeolithic [4.2] site situated on a terrace of the BEAS. Five palaeoliths including four unifacial choppers and a pebble handaxe were recovered.

AI, 12, 1956, pp. 58-92.

Dhalkishore, Dt Bankura. Quartzite pebble tools [4.2].

IAR 1961-2; 1962-3.

Dhamanda, Dt Panch Mahals. Early historical settlement yielding Red Polished Ware [11.23], black-and-red ware, brick structures, beads, bangles and terracotta objects.

Sonawane, V.H., 1976, in *Arch. Congress & Seminar, 1972*, Kurukshetra.

Dhamangaon, Dt Nagpur. Middle Stone Age (Middle Palaeolithic [4.3]) tools and microliths [4.5].

IAR 1961-2.

Dhamania, Dt Udaipur. Microlithic [4.5] site in the Berach valley.

IAR 1962-3.

Dhamantri, Dt Amravati. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1963-4.

Dhamaram, Dt Chandrapur. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAR 1961-2.

Dhamasa, Dt Hoshangabad. Early Stone Age (Lower Palaeolithic [4.2]) site near Dhamasa, 24 km s.-w. of Hoshangabad, yielding handaxes, cleavers and discoidal cores and a large number of flakes.

IAR 1961-2.

Dhamatvan, Dt Ahmadabad. Late Stone Age (Mesolithic [4.5]) site at Boria Mound near the village.

IAR 1968-9.

Dhamdai, Dt Dhule. Microliths comprising scrapers, points, blades, arrowheads, fluted cores, etc., were found associated with an ochre-coloured underfired pottery [4.14.6].

IAR 1957-8.

Dhamnar, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1963-4.

Dhamnari, Dt Satara. Middle and Late Stone Age (Middle Palaeolithic [4.3] and Mesolithic [4.5]) site.

IAR 1962-3.

Dhamola, Dt Saharanpur. Late Harappa [4.10] and OCW [4.12] site.

IAR 1967-8.

Dhamoni, Dt Sagar. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2-3]) site.

IAR 1971-2.

Dhamora, (29°32'; 74°47') Dt Hissar. Rang Mahal [11.24] site.

IAR 1967-8.

Dham-Tikrar-Dhibi, Dt Burdwan. Sherds of the black-and-red ware [11.6.5], Lustrous Red Ware [11.9] painted in black and perforated pottery.

IAR 1963-4.

Dhanaksirur, Dt Bijapur. Lower Palaeolithic [4.2] site.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 131. Joshi, R.V., 1955, *Pleistocene Studies in the Malaprabha Basin*, Poona & Dharwar, p. 31.

Dhanasar, Dt Ganganagar. Late Rang Mahal [11.24] site.

Unpublished.

Dhanasuta, Dt Ujjain. Chalcolithic site yielding Kayatha Ware [11.7].

IAR 1968-9.

Dhanauri, Dt Mirzapur. Microliths [4.5].

IAR 1962-3.

Dhanawali, Dt Meerut. PGW [11.14] site.

IAR 1968-9.

Dhand, Dt Pune. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1963-4.

Dhandana, Dt Dhule. Microliths [4.5].

IAR 1961-2.

Dhandari-Kalan, Dt Ludhiana. Sherds of grey ware, Suñga-Kushan red ware and medieval pottery.

IAR 1964-5.

Dhandharphal, Dt Ahmadnagar. Tools of Series II (Middle Palaeolithic [4.3]).

IAR 1955-6.

Dhandod, **Dhamdod**, Dt Dhule. Microlithic and Chalcolithic habitation [4.14.6] site.

IAR 1960-1.

Dhandri, Dt Nasik. Middle and Late Stone Age (Middle Palaeolithic [4.3] and Mesolithic [4.5]) site.

IAR 1965-6.

Dhaneli, Dt Gwalior. Early historical site yielding the black-and-red ware and NBPW [11.16]. Besides a large number of microliths were found.

IAR 1971-2.

Dhaner, Dt Dhule. Microliths [4.5].

IAR 1961-2.

Dhanera, Dt Durg. Megaliths [4.17.6].

IAR 1972-3.

Dhaneri¹, Dt Marwar. Site on the Lilri with Series II (Middle Palaeolithic [4.3]) tools.

IAR 1958-9.

Dhaner², Dt Pali. Tools of Series II (Middle Palaeolithic [4.3]) and microliths [4.5].

IAR 1960-1.

Dhaneti, Dt Kutch. Mesolithic [4.5] site.

IAR 1970-1.

Dhang¹, Dt Rupnagar. Close to the village of Dhang, 18 km from Rupnagar, was found typical Harappa pottery [11.3].

IAR 1954-5.

Dhang², Dt Solan. Middle Palaeolithic [4.3] site in the SIRSA VALLEY.

Sen, D., 1955, in *Man in India*, 35.3, pp. 76-84.

Dhangadman, Dt Chittaurgarh. The site situated on the Pipla-ka-nalla yielded a few implements consisting of pebble tools, Abbevillio-Acheulian handaxes, late Acheulian handaxes and Levalloisian flakes [4.2].

IAR 1954-5.

Dhangwade, **Dhangawada**, Dt Ujjain. Site on the Chambal yielding pottery of the Malwa fabric [11.10], Kayatha Ware [11.7] and cast copper and punch-marked coins [3.1].

IAR 1968-9; 1969-70.

Dhani Majra, Dt Hissar. Early historical site.

Silak Ram, 1972, unpublished thesis, Kurukshetra Univ.

Dhank, Dt Junagadh. A Red Polished Ware [11.23] site on the e. slopes of the Dhank caves.

IAR 1964-5.

Dhankamla, Dt Midnapur. Chopper-chopping industry [4.2] with a remarkable affinity with Sohan forms.

IAR 1966-7.

Dhankanio¹, (21°45'; 70°55'), Dt Amerli. Late Harappa [4.10] site corresponding to RANGPUR II B and II C.

AI, 18 & 19, 1962 & 1963, p. 205.

Dhankanio², Dt Rajkot. Harappa [4.9] site near Motasagapar. See DUMIANA.

IAR 1958-9.

Dhankot, (22°28'; 76°53'), Dt Gurgaon. PGW [11.14] site.

AI, 10 & 11, 1954 & 1955, p. 139.

Dhanop, Dt Bhilwara. Late Stone Age (Mesolithic [4.5]) site.

IAR 1970-1.

Dhanora¹, Dt Betul (Betul 21°51'; 77°38'), reported to have some late historical or early medieval caves, of the nature of which nothing is known.

Russel, R.V., ed., 1907, *Gazetteer of Betul Dt*, p. 244.—S.B. DEO

Dhanora², Dt Dhule. Palaeolithic tools and Chalcolithic [4.14.6] remains.

IAR 1958-9.

Dhanora³ Dt Raipur, 90 km s. of Raipur, with nearly 500 megaliths [4.17.6], which were surveyed and a few of which were excavated by M.G. Dikshit (IAR 1956-7, p. 35). Four megalithic types have been categorized: (1) apsidal stone enclosure with a capstone lying flush on a cairn heap; (2) apsidal stone enclosure around a central menhir; (3) alignment of apsidal stone enclosures like (2) but occurring in a group of five to seven; and (4) menhir often of huge dimensions kept in position by buttresses of large boulders. In type (2) there are two upright stones of which one ranges in height between 1.5 to 2.1 m and the smaller one between about 1 and 1.2 m. The latter is placed at a distance of 1.8 to 2.1 m from the former stone.

Excavation of megaliths of type (1) has revealed that the apsidal enclosures surround a burial pit covered by a cairn packing with a capstone lying flush over it. The enclosures mark the n., e. and w. boundaries of the burial, the s. side being kept open. The burial pit yields only a few fragmentary human bones with beads, glass bangles and copper vessels, but with no pottery. In type (2) the menhirs are oriented n.-s. and maintained in position by a packing of rubble and clay. As no associated object has been found it is surmised that they are only memorial stones.

In view of the limited nature of the excavation no valid conclusions have been drawn.

—S.B. DEO

Dhanora-Darachi, Dt Chandrapur. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1961-2.

Dhanora-Warkekasa, Dt Chandrapur. Microliths [4.5].

IAR 1961-2.

Dhanori-Budruk, Dt Ahmadnagar. The site on the Mula yielded tools of Series II (Middle Palaeolithic [4.3] and microliths [4.5].

IAR 1958-9.

Dhanori Khurd, Dt Ahmadnagar. Series II (Middle Palaeolithic [4.3]) tools and microliths [4.5].

IAR 1958-9.

Dhanpur, Dt Bilaspur. Late Stone Age (Mesolithic [4.5]) tools.

IAR 1964-5.

Dhansa, Delhi. Pre-Harappa [4.8] site.

Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 126.

Dhar¹, Dt Dhar. Site with painted pottery.

IAR 1956-7.

Dhar², Dt Parbhani. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1960-1.

Dharampuri, Dt Coimbatore. Cairn circles and urn burials [4.17.9] in the Taluka of that name.

IAR 1960-1.

Dharampur, Dt Purulia. Microliths [4.5].

IAR 1959-60.

Dharampuri, Dt Sehore. Microliths were found in the Dharampuri rock-shelters [13] near Bhopal.

IAR 1959-60.

Dharanikota, (16°34'; 80°17'), Dt Guntur, situated on the right bank of the Krishna and known as Dhana-kataka, Dhamnakataka and later on as Dhanyavatipura or Dhanyakataka. Dharanikota covered the Buddhist site of AMARAVATI as well. The temple of Amareśvara after which Amaravati derives its name is mentioned in inscriptions as being situated in Dhanyavatipura or Dhanyavati. Excavations conducted by M. Venkataramayya and later by the writer during 1963-65 (IAR 1963-4, p. 2; 1964-5, p. 2) brought to light several important features. The occupational deposits can be classified into three Pds; with Sub-pds in I and II. On the basis of ¹⁴C tests the occupation has been dated to between c. 400 B.C. and c. A.D. 400. The characteristic features of various Pds and Sub-pds are as follows:

Period I A is characterized mainly by the Black-and-red Ware [11.15], besides the red and black ware. The distinguishing features of this Sub-pd are the excavation of rock-cut navigational channel and a series of hearths.

Pd I B had a few sherds of the NBPW [11.16] besides the Black-and-red Ware and the red and black wares. It is marked by a brisk structural activity in the shape of the construction of a huge wharf [14.8] raised on post-holes at right angles to the navigational channel. The nature of trade and the merchandise that passed through this wharf is clearly brought out by the material remains, noteworthy of which are fine glass ear rings and glass bangles perhaps imported through oceanic and riverine trade. Among the other interesting finds is a well-preserved ear ring of palm leaf. All these ornaments find a place on the sculptures of the AMARAVATI stūpa. Another interesting object is a rectangular piece of a glass seal of violet colour with the emblem of a lion in relief, stratigraphically dated to the 1st century B.C..

Sub-pd II A extends to an average height of 3-36 m above the natural soil. Instead of the wooden wharf a brick structure was constructed all along the channel on its inner side and an earthen embankment was raised at the back. The raising of this ramp was limited to form a

gradual gradient upwards from the brick wharf so that it acted both as a backing and a flood-bank during the tide. The laying of the ramp over the previous occupational deposits changed the shape of the port from a flat-based platform to a port with a constructed high embankment functioning even in times of high flood, the wooden wharf of the previous Pd being possibly subjected to inundation during high tide. The pottery is the Black-and-red Ware and red and black wares, besides Rouletted Ware [11.21], Arretine sherds [11.20], handle pieces of Roman amphora [11.19] and stamped peacock and fish. The antiquities recovered from this ramp have a dating value only to the extent of showing that this period of the port was later than the finds, which include glass ear rings, glass bangle pieces, fragments of cups or goblets of various colours and finish.

During Sub-pd II B the plan of the port was slightly modified, the previous brick wharf being superimposed by a brick revetment with alternate gradients and landings were provided at different levels of the water and a similar brick revetment was constructed on the opposite side as well abutting the original vertical rock-cut side, providing thereby a secondary landing. The pottery recovered from this filling is practically the same as those from the previous mud ramp. In addition a large number of grey-ware sherds representing vases with wide mouth and splayed-out rim were recovered. The pots are well burnt and are mostly absorbant. The appearance of this new ware is later than that of the Rouletted or the Arretine Wares. Glass objects, some copper and lead coins with lion and elephant emblems recognizable as late Sātavāhana issues were also recovered. Assigning a date of the 3rd century A.D. for these coins, their first occurrence on the brick revetment, i.e. on the topmost fringes of the debris, might be taken to serve as reasonably conclusive that this Sub-pd immediately preceded the 3rd century, since this has been dated as falling in the 1st century A.D. and Pd II in the intermediary stage i.e. the 2nd century A.D. (c. 100 B.C. to c. A.D. 200.)

Pd III marks the abandonment of the navigational channel its gradual silting up and its deliberate closing. Some of the materials from this debris include an inscribed potsherd of 3rd and 4th century A.D. and an inscribed broken stone marble piece of the Ikṣvāku period. Besides some late bangle pieces, both polychrome and monochrome, and a few pieces of porcelain ware were also recovered. These would indicate that the final filling of the channel and the conversion of the entire embankment as a land-fort without a channel or a moat might have taken place in the post-Ikṣvāku period. Besides these an ivory sealing inscribed with four letters *Dasilasa*, ascribable to the 2nd or to 3rd century A.D. was found.

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Dharavana-no-Ghod, Dt Mahesana. Red Polished Ware [11.23], painted red ware, coarse red ware and medieval glazed ware.

IAR 1964-5.

Dharawada, Dt Indore. Black-and-red, red-slipped, black burnished and grey wares.

IAR 1962-3; 1963-4

Dharhara, Dt Purnea. Sherds of the NBPW [11.16] were collected together with terracottas of the 2nd-1st century B.C.

IAR 1954-5.

Dharmabad, Dt Karimnagar. Mesolithic [4.5] site.

Gururaja Rao, B.K., ed., 1978, *Decade of Arch. Studies in s. India*, Dharwad, p. 49.

Dharmapuri¹, Dt Karimnagar. Several Lower [4.2] and Middle Palaeolithic [4.3] sites are situated between 450-500 contour lines along the Godavari river from Dharmapuri in Jagtial Taluka to Khanapur in Manthani Taluka.

Gururaja Rao, B.K., ed., 1978, *Decade of Arch. Studies in s. India*, Dharwad, p. 46.

Dharmapuri², Dt Surat. Early, Middle and Late Stone Age (Lower [4.2] and Middle Palaeolithic [4.3] and Mesolithic [4.5]) site.

IAR 1967-8.

Dharmheri, Dt Patiala. Harappa [4.9] site on the w. bank of the GHAGGAR. Pre-Harappa [11.2] and late Harappa pottery [11.4] were found at Dharmheri-2, whereas only late Harappa pottery was found at Dharmheri-1.

IAR 1966-7. Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 122.

Dhaskerala, Dt Bhavnagar. Late historical site.

IAR 1969-70.

Dhasla, Dt Aurangabad. A microlithic factory site of Chalcolithic [4.14.6] association on the banks of the Dudhna.

IAR 1960-1.

Dhaturi, Dt Rohtak. Grey ware and early historical site.

Jour. Haryana Studies, 3, 1, p. 6.

Dhatva, (Dhatwa), Dt Surat, on the s. bank of the Tapti, the mound in the vicinity known as Rundhi Mora. Excavation in 1968 by R.N. Mehta and his colleagues has revealed a Chalcolithic [4.14.5] occupation over the Black Cotton Soil [9.1], with the Malwa Ware [11.10] and black-and-red [11.6] wares and with beads of terracotta, semiprecious stones and shell and cores and microliths of carnelian, jasper chalcedony and chert. The site was then occupied by an iron-using people of the early historical period who used the local ore, black-and-red ware and plain and burnished black ware. Sherds of amphorae [11.19] and the Red Polished Ware [11.23] are available as also copper punch-marked and die-struck coins [3.1]. It has been concluded that the Chalcolithic occupation ranged from the 15th to the 10th century B.C. and the early historical from the 5th-4th century B.C. to the 3rd-4th century A.D.

Mehta, R.N., et al., 1975, *Excavation at Dhatva*, Baroda.—A. GHOSH

Dhaurau, Dt Bulandshahr. PGW [11.14], black-and-red ware, red ware of the Śunga-Kushan period and medieval ware.

IAR 1966-7.

Dhavarihawa, **Dhavaihava**, Dt Allahabad. Middle Stone Age (Middle Palaeolithic [4.3]) site near village Mahuli in the Tundiari valley. Broad blades manufactured on cherty material were also obtained

IAR 1968-9; 1970-1.

Dhavliviarpada, Dt Dhule. Early, Middle and Late Stone Age (Lower and Middle Palaeolithic [4.2, 3] and Mesolithic [4.5]) site.

IAR 1965-6.

Dhawala (31°52' ; 76°16'), Dt Kangra. The site is situated on the right bank of Nakehr Khad, a tributary of the BEAS. At the base of the right bank and in the river bed choppers, cores, scrapers, flakes and points [4.2] were obtained. It is a mixed industry and the tools made on chert appear to be of the Middle Stone Age (Middle Palaeolithic [4.3]). See BEAS-BANGANGA valley.

IAR 1966-7.

Dheka, Dt Purulia. Microliths [4.5].

IAR 1959-60.

Dhekulia, Dt Palamau. Scrapers, points, blades, knives, burins and awls were found. The industry shows a tendency towards the Late Stone Age (Mesolithic [4.5]) tradition.

IAR 1965-6.

Dhelana, Dt Bhilwara. Black-and-red Ware [11.6.2]. See KADUKOTA.

IAR 1957-8.

Dhenkanal, Dt Dhenkanal. Lower Palaeolithic [4.2] site.

Brown, C., 1917, *Catalogue of Prehistoric Antiquities in the Indian Museum at Calcutta*, Simla, p. 68.

Dher Majra, Dt Solan, in the SIRSA VALLEY, about 11 km n. of ROPAR, the site measuring about 106 × 91 m in area and 4 m in height, excavated by Prüfer in 1951. The excavation brought to light a twofold sequence of cultures. The first phase at the site is characterized by a true Harappa ceramic industry [11.3] and other antiquities, while the second phase is distinguished by a composite ceramic industry showing affinities with the Harappa, Cemetery H and other red wares which could all be grouped as the late Harappa ceramic complex [11.4] now well known from MITATHAL II B, BARA, etc.

The Harappa settlement, Phase I, is defended by a mud rampart at least on the side of the river to the n. But the late Harappa deposits, Phase II, cover the ruins of the earlier habitation as well as the defences. The use of the top of the defence rampart as cremation or burial ground as revealed in a trench and the negligible late Harappa pottery from the top level of the Harappa

deposits in the excavation might perhaps suggest a gap between the two phases of occupation. Although no brick structures have been unearthed in course of the excavation, the presence of brickbats suggests the use of brick in construction. The site seems to be fairly rich in copper or bronze objects and other small finds. The excavation has yielded objects of faience [16.6]) clay, bone and stone, besides those of copper or bronze including terracotta figurines, chert blades, weights, beads of semiprecious stones, stone querns and pestles [6.19].

Prüfer, O., 1951, *Nalagarh, Interim Report on the Excavations carried out at Dher Majra*, Calcutta—SURAJ BHAN

Dhigaria, Dt Jaipur. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1961-2.

Dhikola, See SHIVNA VALLEY.

Dhilki Jathan, Dt Ganganagar. Rang Mahal [11.24] site. Unpublished.

Dhimarkhera, Dt Jabalpur. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1962-3.

Dhimda, Dt Udaipur. Early Stone Age (Lower Palaeolithic [4.2]) tools and microliths [4.5].

IAR 1962-3.

Dhobaha, Dt Mirzapur. At Dhobaha, between Basauli and Kandakot, a few microlithic [4.5] cores were collected from within the alluvium directly resting on the sandstone bed.

IAR 1956-7.

Dholakia, See CHANDRAPRABHA VALLEY.

Dholapara, Dt Saharanpur. PGW [11.14] and early historical site.

IAR 1964-5.

Dholbaha, **Dholvaha**, Dt Hoshiarpur. Neolithic settlement yielding pointed-butt celts.

IAR 1969-70.

Dholidhar, Dt Rajkot. Red Polished Ware [11.23] found.

IAR 1957-8.

Dholiya-ni-Vadi, **Vanch**, Dt Bhavnagar. Early historical site.

IAR 1971-2.

Dhondegaon, Dt Nasik. Late Stone Age (Mesolithic [4.5]) site.

IAR 1965-6.

Dhone, Dt Kurnool. Palaeolithic (of unspecified nature) site.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Dhonka Pahar, Dt Palamau. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1970-1.

Dhoraji, Dt Surendranagar. Middle Stone Age (Middle Palaeolithic [4.3]) tools were collected from the cliff-section of the Bhadar.

IAR 1967-8.

Dhoravira, **Kotda**, Dt Kutch. Protohistoric (of unspecified nature) site.

IAR 1972-3.

Dhorwada, Dt Bhandara. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1959-60.

Dhrangandhra, Dt Surendranagar. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3]) site.

IAR 1967-8.

Dhrosan (20°50'; 70°30'), Dt Amreli. Late Harappa [4.10] site corresponding to RANGPUR II B.

AI, 18 & 19, 1962 & 1963, p. 205.

Dhuapnio, Dt Amreli. Harappa [4.9] site in the Shetrunji valley.

IAR 1960-1.

Dhudasia, Dt Rajkot. Harappa Ware [11.3].

IAR 1957-8.

Dhudhi, Dt Mirzapur. Microlithic [4.5] site.

IAR 1962-3.

Dhule, Dt Dhule. Palaeoliths and microliths were picked up on the Panjra. Sherds of black-on-red and grey wares, characteristically Chalcolithic [4.14.6], along with the later black-and-red ware were found. The site appeared to have had a medieval occupation as well. On the left bank of the Panjra, near Dhule, was noticed a Chalcolithic burial site with the typical painted pottery.

IAR 1958-9.

Dhulel, Dt Ujjain. Early historical site.

IAR 1971-2.

Dhuleta, Dt Jullundur. PGW [11.14], Black-slipped Ware [11.13] and black-and-red ware.

IAR 1963-4. Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 122.

Dhulkot (22°50'; 71°02'), Dt Junagadh. Late Harappa [4.10] site corresponding to RANGPUR II B and II C.

AI, 18 & 19, 1962 & 1963, p. 205.

Dhulod, Dt Dhule. Microliths associated with ochre-coloured pottery [4.14.6]. See DHAMDAL.

IAR 1957-8.

Dhumai, Dt Kutch. Rang Mahal cultures site.

AI, 18 & 19, 1962 & 1963, p. 187.

Dhur, Dt Varanasi. Black-and-red Ware [11.6.3].

IAR 1962-3.

Dhurala, Dt Kurukshetra. Late Harappa [4.10] site.

Kurukshetra Univ. Res. Jour., 10, 1976, pp. 28-9.

Dhureri, Dt Ujjain. Historical site.

IAR 1971-2.

Dhuri-Kusi-Dih, Dt Varanasi. NBPW [11.16] site.

IAR 1963-4.

Dhuriyapur, Dt Gorakhpur. NBPW [11.16] site.

IAR 1963-4.

Dhutarpur, Dt Rajkot. Harappa [4.9] site near Vasawad. See DUMIANA.

IAR 1958-9.

Diankel, Dt Ranchi. Microliths [4.5].

IAR 1964-5.

Diara, Dt Una. Early historical pottery.

IAR 1970-1.

Dibber, Dt Kangra. Lower Palaeolithic [4.2] site in the BANGANGA VALLEY.

Mohapatra, G.C., 1966, in *Bull. Deccan College Res. Inst.*, pp. 221-37.

Didwana, See 9.2.

Dighave, Dt Dhule. Mesolithic [4.5] site.

IAR 1963-4.

Dighul, Dt Mirzapur. Microlithic [4.5].

IAR 1962-3.

Dighwa, Dt Deoria. NBPW [11.16], early historical Buddhist remains and terracotta figurines.

IAR 1962-3.

Digraj, Dt Sangli. Tools of the Middle and Late Stone (Middle Palaeolithic [4.3] and Mesolithic [4.5]) Ages.

IAR 1962-3.

Digri, Dt Ranchi. Asura (?) burial site [14.4] consisting of grave-stones under which large earthen jars were discovered containing bones and in some cases copper ornaments or stone beads.

Roy, S.C., in *Jour. Bihar & Orissa Res. Soc.*, 1, 1915, p. 243.

Diguvametta, Dt Kurnool. Lithic tools and megaliths [4.17.7] were found close together.

IAR 1959-60.

Dih, Dt Jaunpur. NBPW [11.16] site.

IAR 1963-4.

Diha, Dt Pratapgarh. Site yielding sherds of the NBPW [11.16], Black-slipped Ware [11.13], grey and red wares, besides a few pieces of quartz and banded agate.

IAR 1969-70.

Dih-Darari, Dt Jaunpur. NBPW [11.16].

IAR 1963-4.

Dilwan, Dt Una. Early historical pottery.

IAR 1970-1.

Dinahalli, Dt Mysore. Megalithic cist burials [4.17.8].

IAR 1961-2.

Dindori¹, Dt Mandla. Five Middle Palaeolithic [4.3] and Mesolithic [4.5] factory sites were discovered within a radius of 8 km of Dindori. The tools included scrapers, points, blades, cores, etc.

IAR 1961-2.

Dindori², Dt Nasik. Mesolithic [4.5] site.

IAR 1965-6.

Dindori-Pakhri, Dt Mandla. Early Middle and Late Stone Age (Lower and Middle Palaeolithic [4.2, 3] and Mesolithic [4.5]) tools. (Same as DINDORI¹).

IAR 1964-5.

Dinnakottur, Dt Dharmapuri. Megalithic cists [4.17.9].

IAR 1964-5.

Diplana, Dt Ganganagar. Harappa [4.9] site in the SARASVATI VALLEY.

Unpublished.

Dirghasi, Dt Srikakulam. Site yielding red and red-slipped wares of the early historical period.

IAR 1966-7.

Divrana, Dt Junagadh. Site with the Red Polished Ware [11.23].

IAR 1955-6.

Divri-Siuni, Dt Jabalpur. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1962-3.

Diwada Colony, Dt Panch Mahals. Mesolithic [4.5] site.

IAR 1972-3.

Diyalachak, Dt Kathua. Two stray mace-heads were found.

IAR 1968-9.

Dobo, Dt Singhbhum. Microlithic tools [4.5] were found.

IAR 1959-60.

Doda Kodattur (13°1'; 77°58'), Dt Kolar. Open-air site with a couple of rock-shelters [13] yielding Neolithic tools and pottery [4.6.9]. Dwelling pits [14.13] form the most important feature of this settlement. The contents of the pits comprised stone axes, burnt rice husks and ash. The walls of some of the pits showed traces of mud plaster. Fully ground stone axes of pointed-butt type, triangular axes with ground edges, axe-hammers with a plano-convex cross-section and blunted butt-end were among the tools types. The ceramic wares included a pale-grey ware and an ill-fired coarse and gritty red ware. Megalithic pottery including the Black-and-red Ware [11.15.3] and a coarse red ware was also found.

IAR 1967-8; 1971-2; 1972-3.

Doddahamma, Dt Mysore. Megalithic habitation [4.17.8] site yielding Black-and-red Ware [11.15.3].

IAR 1965-6.

Doddakalkuhalli, Dt Kolar. Megalithic stone circles [4.17.8]. (Same as following?)

IAR 1972-3.

Doddakallahalli, Dt Kolar. Megalithic [4.17.8] site. (Same as preceding?)

IAR 1971-2.

Doddalattur, Dt Mysore. Megalithic cist burials [4.17.8].

IAR 1961-2.

Doddamanchi, Dt Dharmapuri. Megalithic sites with port-holed cists, cairn-packed cists and stone axes [4.17.9].

IAR 1967-8.

Doddamolathe, Dt Coorg. Port-holed cists [4.17.8].

ASI-AR S. Circle, 1916-7.

Doddasivara, Dt Kolar. Megalithic [4.17.8] site.

IAR 1972-3.

Dodda Timmanahali, Dt Dharmapuri. Megalithic site with port-holed cists [4.17.9].

IAR 1967-8.

Doddur, Dt Kolar. Megalithic stone circles [4.17.8].

IAR 1970-1.

Dodduru, Dt Nilgiri. Megalithic [4.17.9] site.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras, p. 228.

Dodiana, Dt Hoshiarpur. Sherds of red ware, Kushan coins and large-sized bricks measuring 45 × 38 × 25 cm.

IAR 1966-7.

Dodlavagu valley, Dt Nellore. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3]) tools were found at Ambapuram, Irlapadu and Padamatipadu.

IAR 1965-6.

Dodparandhalli, Dt Kolar. Megalithic stone circles [4.17.8].

IAR 1970-1.

Dodwan, Dt Gurdaspur. Black-slipped Ware [11.13] and black-and-red and grey wares.

IAR 1961-2.

Dogri, Dt Jullundur. Harappa pottery [11.3] was found at the site 12 km n. of Jullundur.

IAR 1956-7.

Dohada, Dt Kheda. Mesolithic [4.5] and early historical site.

IAR 1971-2.

Doldenrya, Dt Purulia. Microliths [4.5].

IAR 1959-60.

Doli, Dt Jabalpur. Lower Palaeolithic [4.2] and Middle Palaeolithic [4.3] site.

IAR 1959-60; 1968-9.

Domargu, Dt Medak. Microliths including points, scrapers and blades, fluted chert cores and a few pieces of handmade grey pottery, thick in section and coarse in fabric, were picked up.

IAR 1959-60.

Dombarahalli, Dt Dharwar. Early historical site. See ANVERI.

IAR 1959-60.

Domuhani, Dt Mayurbhanj. The site on the river Burhabalang yielded Series I (Lower Palaeolithic [4.2]) tools.

IAR 1957-8.

Don, Dt Saran. Finds belonging to the Gupta and Pāla periods.

IAR 1962-3.

Don river, Dts Bijapur and Gulbarga. Middle Stone Age (Middle Palaeolithic [4.3]) sites on the Don river and on the Hunsgi Nullah and its feeders are: Barnal; Bapperga; Chehnur; Devapur; Gulbal (Locality 1); Hebbal Buzurg; Hunsgi (Localities 1 and 2); Kaldevanahalli (Localities 1, 2, 3 and 4); Maskanel; Matkandevanahalli; Meralbhavi (Localities 1 and 2); and Wajal. The composite stratigraphy is as follows: The basal stratum consists of either weathered shale limestone or travertine deposit. It is overlain by a conglomerate deposit. The conglomerate yielded a large number of Middle Stone Age artefacts of chert. The types included scrapers, points, borers, etc., made on plain or prepared flakes and flake blades.

IAR 1968-9.

Donabanda, Dt Krishna. Neolithic implements [4.6.8] were discovered with the associated pottery and megaliths [4.17.7], besides pottery comparable with those from the historical levels of NAGARJUNAKONDA.

IAR 1961-2.

Dondapadu, Dt Krishna. Sites with dolmens [4.17.7].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Dondolugollapalle, Dt Nellore. Lower [4.2] and Middle Palaeolithic [4.3] site in the Venkatagiri river valley.

IAR 1965-6.

Donekal, Dt Anantapur. Neolithic [4.6.8] habitation site. See AKKAMMAKONDO.

IAR 1965-6.

Dongar Goan, Dt Chandrapur. Late Stone Age Mesolithic [4.5] and Megalithic [4.17.6] site.

IAR 1960-1; 1970-1.

Dongaria Rajaram, Dt Jabalpur. Microliths [4.5].

IAR 1957-8.

Dongarkada, Dt Parbhani. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1970-1.

Dongar Saongi, Dt Chandrapur. Late Stone Age (Mesolithic [4.5]) site.

IAR 1969-70.

Dongarwara, Dt Hoshangabad. Palaeoliths including handaxes, cleavers, choppers and scrapers [4.2].

IAR 1960-1.

Donge, Dt Pune. Microlithic [4.5] site.

IAR 1959-60.

Dongri-no-Tekro¹, Dt Bharuch. Early historical to medieval site.

IAR 1967-8.

Dongri-no-Tekro², Dt Vadodara. Early historical site.

IAR 1966-7.

Donkamedu, Dt Bijapur. Microlithic [4.5] and Megalithic [4.17.8] site.

IAR 1961-2.

Doonda, Dunda, Dt Jabalpur. Series I (Lower Palaeolithic [4.2]) and II (Middle Palaeolithic [4.3]) tools.

IAR 1958-9; 1959-60.

Doran, Dt Singhbhum. Microlithic [4.5] site.

IAR 1963-4.

Doravarichattram, Dt Nellore. Lower Palaeolithic [4.2] tools.

IAR 1966-7.

Dorigal, Dt Anantapur. Late Stone Age (Mesolithic [4.5]) site.

IAR 1965-6.

Dorigallu, Dt Cuddapah. Neolithic flakes [4.6.8].

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Dornal, Dt Kurnool. The site on the Tigaleru yielded Series I and II (Lower and Middle Palaeolithic [4.2, 3]) tools and megaliths [4.17.7].

IAR 1959-60.

Dorothy Deep, Dt Pachmarhi. Mesolithic rock-shelter with paintings [13].

Wakankar, V.S., & Brooks, R.R.R., 1976, *Stone Age Painting in India*, Bombay.

Dosi, Dt Chandrapur. Late Stone Age (Mesolithic [4.5]) site with microliths.

IAR 1970-1.

Dotheri (29°25'; 74°0'), Dt Bikaner. PGW [11.14] site. *AI*, 10 & 11, 1954 & 1955, p. 139.

Dranadala, Dt Krishna. Megalithic site with dolmens [4.17.7].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Dronachalam, Dt Kurnool. Lithic tools and megaliths [4.17.7] were found close together.

IAR 1959-60.

Dr̥ṣadvatī valley, the valley of the present-day Chautang or Chitang, rising in the submontane regions of Dt Ambala, with the Patharalanadi perhaps anciently forming its upper course, the name itself of the latter suggesting its identity with the Dr̥ṣadvatī ('full of stones'). The Chautang runs to the s.-e. of the SARASVATĪ (the intervening doab being known as Brahmāvarta in historical times, *Manusmṛti*, 2-17), and passes by Kapalmochan, Balchappar and Mustafabad. Its channel can be further traced w.wards along Ladwa (29°59'; 77°5') in Dt Kurukshetra, Pujam, Nisang and ASANDH in Dt Karnal, Jind (29°19'; 76°23') in Dt Jind and RAKHI GARHI (29°17'; 76°7'), Hansi (29°6'; 76°0'), Hissar (29°10'; 75°46') and SISWAL (29°10'; 75°30') in Dt Hissar. In Rajasthan its dried-up bed is marked between sand-dunes and can be traced along BHADRA (29°15'; 75°30'), SOTHI, NOHAR, RAWATSAR, etc., till it joins the Ghaggar (ancient Sarasvatī) about 5 km n. of Suratgarh (29°19'; 73°57') in Dt Ganganagar. The archaeological potentiality of the Dr̥ṣadvatī valley was first demonstrated by Ghosh, 1952, in his explorations of its lower dried-up course in Dt Ganganagar during the early fifties which revealed the existence of the SOTHI KALIBANGAN I [11.2] and the Harappa [11.3] ceramic complexes, their stratigraphic relationship being established by the excavation at KALIBANGAN.

The upper course of the river was surveyed by the author in 1960-1 and onwards (Suraj Bhan, 1973). An intensive exploration of the Kurukshetra region was undertaken during 1977 by the author jointly with Shaffer (Suraj Bhan and Shaffer, 1979). These explorations brought to light important sites like SISWAL, MITATHAL (28°53'; 76°11'), RAKHI GARHI (Rakhi Shahpur), BALU, (29°40'; 76°23'), DAULATPUR (29°58'; 76°58'), etc. Excavation was undertaken at MITATHAL, Dt Bhiwani, by the writer in 1968. As a result three stages of the Harappa culture were revealed, beginning with Late Siswal Harappa ceramic culture through the mature and late Harappa stages. In 1970 the author excavated at SISWAL, bringing to light the remains of the Early Siswal (Sothi Kalibangan I) culture superimposed by the Late Siswal (Harappa) ceramic culture. A closer study of the site of RAKHI GARHI brought to light the Sothi Kalibangan I ware, the Harappa ware and the late

Harappa ware. A similar assemblage of pottery types was noticed at BALU in Dt Jind. A significant feature noticed in the course of the survey was the remains of a brick platform and an inscribed Harappa sherd from AUGAND (29°40'; 76°49'), a late Harappa site in Dt Karnal. Excavation was conducted at DAULATPUR in Dt Kurukshetra by the author and Singh from 1968-9 to 1969-70 and by the latter from 1976-7 and 1977-8. The excavation brought to light the remains of a late Harappa and PGW [11.14] settlements with a break in between.

The above investigations brought to light the following sequence of cultures in the valley. Pd I (pre-Harappa): SISWAL A, RAKHI GARHI, BALU; Pd II (Harappa): MITATHAL I, II A, RAKHI GARHI, BALU, SISWAL B; Pd III (Late Harappa): MITATHAL II B, RAKHI GARHI, BALU, DAULATPUR I; Pd IV (PGW): DAULATPUR II; Pd V (NBPW): DAULATPUR III; and Pd VI (NBPW): DAULATPUR IV.

The following are the important sites in the Dr̥ṣadvatī valley, the cultures represented therein being specified within brackets (ES = Early Siswal = Sothi/Kalibangan I; LS = Late Siswal = Harappa; H = Harappa; LH = late Harappa); PGW = Painted Grey Ware; LHist = late historical: SISWAL, Dt Hissar (ES, LS/H); RAKHI SHAHPUR, Dt Hissar (ES, H, LH); MITATHAL, Dt Bhiwani (LS/H, LH); DAULATPUR, Dt Kurukshetra (LH, PGW); BALU, Dt Jind (ES, H, LH); AUGAND (29°40'; 76°49'), Dt Karnal (LH); BUDHANPUR, Dt Karnal (LH); ALIPURA, Dt Jind (LH); THIRANA, Dt Karnal (LH); DHAKAL, Dt Jind (LH, PGW); GAGSINA, Dt Karnal (LH); BHADRA, Dt Ganganagar (LHist); and SOTHI and NOHAR, Dt Ganganagar (Sothi/Kalibangan I = ES).

Ghosh, A., 1952, in *Bull. National Inst. of Sciences in India*, New Delhi. Singh, U.V., 1978, *Kurukshetra Univ. Res. Jour. (Art and Humanities)*, 10. Suraj Bhan, 1973, in Agrawal, D.P., & Ghosh, A. (ed), *Radiocarbon & Indian Arch.*, Bombay; 1973, *Prehistoric Arch. of the Sarasvatī and Dr̥ṣadvatī Valleys (Haryana)*, Ph.D. thesis, Baroda (unpublished); 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra. Suraj Bhan & J.G. Shaffer, 1979, in *Man & Environment*, 2.—SURAJ BHAN

Drummondganj, Dt Mirzapur. Microliths [4.5].

IAR 1962-3.

Dubalabera, Dt Ranchi. Lower Palaeolithic [4.2] site.

IAR 1965-6.

Dubal Dhan, Dt Rohtak, PGW [11.14] and Black-slipped ware [11.13] site.

Jour. Haryana Studies, 3, 1, p. 7.

Dubar-Kunda, Dt Santal Parganas. Microliths and black-and-red ware [4.14.3].

IAR 1963-4.

Dubka-Kera, Dt Jabalpur. Microliths [4.5].

IAR 1959-60.

Dudakheri, Dt Kurukshetra. Late Harappa [4.10] and

PGW [11.14] site.

Kurukshetra Univ. Res. Jour., 10, 1976, pp. 28-9.

Duddala, Dt Raichur. Site with Megalithic stone circles [4.17.8].

Jour. Geological Survey of Hyderabad, 3, 1, pp. 76-82.

Dudha, Dt Nagpur. Megalithic stone circles [4.17.6].

IAR 1968-9.

Dudhi, Dt Mirzapur. Microliths [4.5].

IAR 1962-3.

Dudhiya, Dt Junagadh ? Red Polished Ware [11.23].

IAR 1957-8.

Dudli Bukhara (Mustahkan), Dt Saharanpur. OCW [4.12] site.

IAR 1967-8.

Dudwara, Dt Jabalpur. Microliths [4.5].

IAR 1960-1.

Dughara, Dt Gorakhpur. Black-and-red Ware [11.6.3].

IAR 1963-4.

Dugni, Dt Singhbhum. Neolithic [4.6.4] site on the SAN-JAI also yielding palaeoliths and microliths [4.5].

IAR 1972-3.

Dugri (30°28'; 76°34'), Dt Rupnagar. PGW [11.14] site.

AI, 10 & 11, 1954 & 1955, p. 139.

Dukarne, Dt Aurangabad. Site going back to Sātavāhana times and yielding an idol of *tirthankara*, rotary querns [6.19], terracotta objects, sculptures, beads and pottery.

IAR 1972-3.

Dukheri, Dt Ambala. Harappa pottery [11.3] and late Harappa [11.4] wares were recovered from Dukheri-1. Late Harappa pottery was also found at Dukheri-2, comparable with MITATHAL II B.

IAR 1963-4; Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 123.

Dulakheda, Dt Bijapur. Neolithic tools, mostly axes, made on fine-grained trap were found. The site also yielded painted black-on-red pottery characteristic of the Chalcolithic cultures of the upper Deccan [4.14.6] and a thick grey ware similar to that found at BRAHMA-GIRI and BAHAL in association with microliths.

IAR 1957-8.

Dulchipur, Dt Sagar. Palaeoliths (of unspecified nature) were found in the valley of the Billa, a tributary of the Dhasan.

IAR 1960-1.

Dulmana, Dt Ganganagar. Rang Mahal [11.24] site in the SARASVATĪ VALLEY.

Unpublished.

Dulmi, See DALMI.

Dulna, Dt Ranchi. Site situated on the n. bank of the river Katri. Bricks can be seen on the surface.

Patil, D.R., 1963, *Antiquarian Remains in Bihar*, Patna, p. 122.

Dumar, Dt Santal Parganas. Microliths [4.5].

IAR 1963-4.

Dumhara, Dt Gorakhpur. NBPW [11.16] site.

IAR 1963-4.

Dumiana, Dt Rajkot. Harappa [4.9] site characterized

by the convex-sided bowl, handled bowl, dish with flared rim, dish-on-stand, square-rimmed jar and perforated jar. Both red and buff wares were present. The painted designs consisted of roundels, wavy lines, hatched triangles, intersecting loops, leaves, etc.

IAR 1958-9.

Dumalja, Dt Ujjain. Historical site.

IAR 1971-2.

Dunda, See DOONDA.

Dundara, Dt Jodhpur. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1959-60.

Dundigam, Dt Nellore. Lower [4.2] and Middle Palaeolithic [4.3] site in the Pennar valley.

IAR 1965-6.

Dungarda, Dt Surat. Early, Middle and Late Stone Age (Lower [4.2] and Middle Palaeolithic [4.3] and Mesolithic [4.5]) site.

IAR 1967-8.

Dungarpur, (22°03'; 71°13'), Dt Rajkot. Post-Harappa site corresponding to RANGPUR II C.

AI, 18 & 19, 1962 & 1963, p. 205.

Dungar Tamashi, Dt Chandrapur. The site on the Kholra-Godi stream yielded fluted cores, blades and burins.

IAR 1968-9.

Dungra-Busti, Dt Darjeeling. Neolithic [4.6.4] site.

IAR 1962-3.

Dunria, Dt Dhenkanal. Three shouldered celts of copper [4.11].

AI, 7, 1951, p. 29.

Durendi, Dt Banda. The site situated on the bank of the Ken yielded Middle Palaeolithic [4.3] tools comprising burin-cum-scrapers, side scrapers, pointed tools and blades.

Misra, V.D., 1971, *Some Aspects of Indian Arch.*, Allahabad, pp. 41-2.

Durgamna, Dt Nagpur. Megalithic [4.17.6] site adjacent to the village Durgamna on the Nagpur-Amravati road.

IAR 1959-60.

Durgapur, Dt Burdwan. A large number of tools, flakes and cores of the Late Stone Age (Mesolithic [4.5]) were recovered from the yellowish and sandy silt stretching over the laterite detritus of the region near Durgapur.

IAR 1971-2.

Duria, Dt Bhilwara. The site yielded black-and-red ware and microliths [4.14.1]. The latter included leaf-shaped points, finely retouched blades, triangles and end scrapers.

IAR 1957-8.

Durjanpura, Dt Jhansi. Palaeolithic [4.2] and microlithic [4.5] site.

IAR 1963-4.

Duruji, Dt Gorakhpur. Black-and-red Ware [11.6.3].

IAR 1963-4.

Dusana, Dt Dhule. Late Stone Age (Mesolithic [4.5])

tools and Chalcolithic habitation [4.14.6] site.

IAR 1964-5.

Dusi-Mamandur. See MAMANDUR.

Dwarka (22°15'; 69°0'), Dt Jamnagar, one of the most famous Vaisnava centres in India. According to the *Bhāgavata*, *Harivaṁśa* and Jaina literature the Yādavas under Kṛṣṇa migrated from Mathurā to Dvārakā, which was then probably known as Kuśasthali and was the capital of Anarta. Excavation was undertaken here jointly by the Deccan College and the Dept of Arch., Gujarat State, in 1962 under the guidance of H.D. Sankalia (IAR 1962-3, p. 7). The area selected for the excavation was a private compound just outside the compound wall of the Dvārakādhīśa temple. A trench, 7.63 × 6.11 m, was dug to a depth of about 11 m where the rock level was touched. At a depth of 3.66 m, and downwards it was all sea sand; excavation was carried out with a strong wooden shoring. Four Pds were identified but the association of the site with Kṛṣṇa and the Yādavas remains unproved.

Pd I (1st-2nd century B.C.). This Pd is represented by a layer of sea sand 5 m thick. The pottery is mostly fragmentary, its surface affected by salty sand and its edges rounded off by rolling in water. Nevertheless some rim fragments and body portions of pots give an idea of their shapes. The red ware is the major ware (95%), the black ware being insignificant. The red ware contains slipped, burnished, coarse and painted specimens. The black ware has coarse, slipped and burnished surfaces. The shapes in both the wares are the globular basin, pot-on-stand and bowl. Terracotta areca-nut-shaped beads, stoppers and shell bangles are the other finds. No structural remains have been found.

Pd II (1st to 4th centuries A.D.). This again consists of layers of sea sand 2.55 m in thickness and the potsherds are affected in the same way as in Pd I. The quantities of red ware and the black ware are almost equal. The red ware is burnished, slipped and coarse, the shapes including globular pots and short-spouted pots. The black

ware is decorated with punch, impressed or incised designs and then burnished. The shapes are cooking pots with ledged shoulder, lids, etc. Only one piece of the Red Polished Ware [11.23] and few sherds of amphora [11.19] have been found. The antiquities include shell bangles.

Pd III (7th-8th centuries). The quantity of pottery is larger as compared to that of two earlier Pd. The black ware is greater in number than the red ware which is either slipped or coarse. The shapes in the red ware are globular pots, storage jars, and carinated pots. The antiquities include glass beads, terracotta stoppers and tile pieces. This Pd has given evidence of successive superimposed stone structures.

Pd IV (12th-19th centuries). The pottery from this Pd is larger in bulk than that from all the three preceding Pds put together. The red ware and the black ware are equal in quantity. The shapes are globular pots, basins, carinated pots and lids of various types. The other distinct wares are the Celadon Ware [11.25] and kaolin and glazed wares. The other antiquities are beads of terracotta, shell, stone (carnelian and chalcedony) and glass. There are also antimony rods [18.1] and bangles of glass, tiny ivory lids, parts of silver ornaments, copper ring, fragments of copper objects and terracotta toys like cart, animals, etc., and skin rubber [18.4]. Coins are found only in this Pd and mostly belong to Gujarat Sultāns.

Ansari, Z.D., & Mate, M.S., 1966, *Excavation at Dwarka*, Poona.—R.N. MEHTA & Z.D. ANSARI

Dyaganhatti, Dt Belgaum, Neolithic-Chalcolithic [4.14.8] site with characteristic grey, blackish-grey and pinkish-buff wares, some micaceous and some with incised decorations, flakes, parallel-sided blades, saddle-querns [6.19] and bones.

IAR 1963-4. 1977. *Prof. P.B. Desai Felicitation volume*, Dharwad, pp. 4-30.

Dyavasandra, Dt Kolar. Megalithic site with stone circles [4.17.8].

Information from C. Krishnamurthy through A. Sundara.

E

Ebgodu (Mand), Dt Nilgiri. Megalithic [4.17.9] site.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras, p. 226.

Edakkal, Dt Kozhikode. Neolithic [4.6.10] and Megalithic [4.17.10] site.

Fawcett, H.F., 1901, in *Indian Antiquary*, 30, pp. 409-21.

Edakulathur, Dt Trichur. Megalithic [4.17.10] site with urn burials.

IAR 1967-8.

Edalabad, Dt Jalgaon. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1965-6.

Edappa, Dt Palghat. Megalithic [4.17.10] site with cists.

IAR 1968-9.

Edearcoupom, Pondicherry. Megalithic [4.17.9] site.

Casal, J.-M., & C., 1956, *Site urbain et Sites funéraires des Environs de Pondichéry*, Paris.

Edutara, Dt Malappuram. Megalithic site with dolmens and menhirs [4.17.10].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Eksamba, Dt Belgaum. Chalcolithic [4.14.8] site with remnants of an ash mound [14.3].

Prof. P. B. Desai *Felicitations Volume*, Dharwad, 1971, pp. 4-30.

Elambaulassery, Dt Palghat. A circular cave with a top opening and with two vases of the Black-and-red Ware [11.15.3].

IAR 1967-8.

Elampulaseri, Dt Malappuram. Megalithic site with dolmens [4.17.10].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Elana (25°31'; 73°36'), Dt Jalore. The site, 5 km from Jalore on the bank of the river Jawai, yielded a flat copper celt [4.11]. See 9-2.

Agrawala, R.C., 1979, in *Man & Environment*, 3, p. 92.

Elanad, Dt Trichur. Megalithic [4.17.10] site.

IAR 1972-3.

Elathur, Dt Coimbatore. Megalithic cairn circles [4.17.9].

IAR 1962-3.

Elavamalai, Dt Coimbatore. Megalithic cist burials [4.17.9] and Russet-coated Painted Ware [11.22].

IAR 1961-2.

Elavancherry, Dt Palghat. Megalithic [4.17.10] site with dolmens.

IAR 1969-70.

Ellakaru. See BOGGERU VALLEY.

Eletattumattamba, Dt Malappuram. Megalithic site with dolmens [4.17.10].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Ellampalle, Dt Chittoor. Early Stone Age (Lower Palaeolithic [4.2]) tools and dolmens [4.17.7].

IAR 1962-3.

Elleswaram. See YELLESWARAM.

Ellora, Dt Aurangabad. Upper Palaeolithic [4.4], Mesolithic [4.5] and Chalcolithic [4.14.6] remains.

Soundara Rajan, K.V., & Sen Gupta, R., 1962, in *Marathawada Univ. Jour.*, 2, pp. 67-76.

Emamoompur, Dt Anantapur. Pointed-butt polished stone axes [4.6.8].

AI, 4, 1947-8, p. 296.

Enikal Mand, Dt Nilgiri. Megalithic sites with cairns [4.17.8].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Enusonai, Dt Dharmapuri. Megalithic burial [4.17.9] site.

IAR 1969-70.

Erachh, Dt Jhansi. NBPW [11.16] was found at the site, 61 km n. e. of Jhansi on the right bank of the Betwa, together with large-sized bricks with finger marks.

IAR 1955-6.

Eran (24°5'; 78°10'), Dt Sagar, on the s. bank of the river Bina (ancient Veṇvā), a tributary of the Betwa (Vetravati). A. Cunningham first brought to light its rich architectural, epigraphic and numismatic remains (*ASI-AR*, 7, pp. 88-90; 10, pp. 77-90; 14, pp. 148-9). He discovered a number of copper punch-marked coins and a few inscribed die-struck and cast coins [3.1] some of them bearing the name Erakanya or Erakana in early Brāhmī script. Inscriptions of Samudragupta of the Gupta dynasty, of Toramāṇa the Hūṇa ruler and of the time of the late Gupta Bhānugupta establish its ancient name as Airaṇika, an administrative unit of Ākara (e. Malwa). A Viṣṇu temple built during the rule Candragupta II is simple in style and possesses a roof with an interior decorated with lotus and ornamented pillars bearing the *pūrṇa-ghaṭa*, scrolls and *kirttimukha* motifs, with a Garuḍa pillar in front of the main shrine. Loose sculptures of Brāhmanical deities also bespeak the religious importance of the place.

The potentiality of the town possessing a much earlier

habitation was revealed when excavation was undertaken at the site during 1960-5 by the Univ. of Saugar under K.D. Bajpai (*IAR 1960-1*, p. 17; *1961-2*, p. 24; *1962-3*, p. 11; *1963-4*, p. 15; *1964-5*, p. 16), which has proved that Eran had been occupied since Chalcolithic [4.14.5] times. The ancient settlement was seen to span the entire natural curve of the river Bina and was represented by a series of rolling mounds ranging in height from 6-10 to 12-20 m, of which the maximum habitation deposit was 8-84 m. The site has been subjected to much erosion creating deep and wide cavities which has made it difficult to get the maximum results.

The earliest settlement, Pd I, was Chalcolithic in nature and was characterized by the use of stone artefacts and wheel-made ceramics and knowledge of copper. The stone implements consisted of a few neoliths [4.6] and microliths which comprised parallel-sided blades, lunates, flakes and cores. The ceramic contents of the culture were painted pottery of various fabrics. Broadly three wares could be distinguished: (1) red ware with light-to-deep slip, painted in black over the red surface; (2) black-and-red ware [11.6.2] painted in white over a black background; and (3) grey ware, occasionally painted. The dominant ceramic industry was the red ware, mostly painted in black. Made of well-levigated clay and well-fired, its outer and in some cases the inner surfaces were decorated with paintings. The dish, bowl and storage jar were the common vessels. The painted decorations were often executed on the upper portion of the vessel up to the rims. The designs were bands, geometrical patterns, animal motifs such as rows of stylized antelopes, figures of dogs, goats (?), scorpions in a row and other indeterminate animals. A few sherds also bore incised decoration. This red ware is said to be characterized by a shining lustre and is considered superior in quality to the fabric found at other sites of Malwa region [11.10] such as MAHESHWAR-NAV-DATOLI and KAYATHA. Recently another fabric in the ware, the Kayatha Ware [11.7], has also been found.

The black-and-red ware painted in white over a black interior was represented in shapes of the dish, bowl and basin. The fabric seems to be superior to that found in the Banas valley [11.6.2].

The grey ware of fine fabric was occasionally painted in black or in red; the vessels with thin sections were finer and their shapes included the jar with high neck and flaring mouth, bowl and basin. In some the outer surface was coated with a whitewash on a grey background. It occurred throughout the Chalcolithic habitation and seems to be different in all respects from either the PGW of the n. [11.14] or the Neolithic grey ware of the s. [11.1.5].

The material assemblage of the Chalcolithic people was varied in its contents. The use of copper is testified

by the find of two broken celts. Another valuable find is a circular gold piece. The largest number of finds are the beads, some unfinished prepared from various materials such as agate, carnelian and jasper, steatite, shell, paste and terracotta. Among other objects the foremost are human and animal figurines, in the latter of which the humped bull is quite popular, terracotta discs, toy-cart wheels and bangles and others used for domestic purposes. Domestic objects include stone querns [6.19], rubbers, ring-stones, balls, etc. A few bone points were also found.

House plans and structures could not be revealed due to the damage caused by erosion. The exposed extant remains included six floor-levels. They were well-rammed with yellow clay mixed with *kankar*, their thickness ranging between 10 and 20 cm. In addition burnt lumps of clay were also crushed and laid on the floors, which were then made compact with mud and lime and smoothened, perhaps with cow-dung. A few circular hearths with ash and animal bones were exposed. The larger of them are two sets of twin hearths with raised walls, one set having circular burnt ash remains in the vicinity.

The later phase of the Chalcolithic habitation was characterized by certain new features, which included the construction of a mud defence wall, abundant use of the Malwa Ware [11.10], introduction of the channel-spout and increase in the number of the dish-on-stand. The wall covered the s. side of the settlement, all the other sides being enclosed by the river. It had a basal width of 30 m and a maximum extant height of 6-41 m. The gap of 16-47 m between the wall and the moat in between was filled with black and yellow clay possibly during the Chalcolithic times. Its construction and use in the later Chalcolithic phase has been emphasized by the excavator due to the find of Chalcolithic ceramics such as channel-spouts, microliths and copper celt. Its utility seems to have been twofold, viz. protecting the settlement from external invasion and averting possible flooding by diverting excess water in the moat, which was to the s. of the defence wall with an extant width of 36-6 m and depth of 5-5 m. It seems to have been in use down to historical times.

The accepted date for the Chalcolithic phase of Eran is c. 2100-700 B.C. (It has been said that the Chalcolithic samples of Eran show a scatter in ^{14}C dates: 'three consistent dates may put Pd I to c. 1500 B.C. The Chalcolithic phase perhaps came to an end around c. 1400 B.C.' Agrawal *et al.*, p. 116). Recently on the basis of ^{14}C dates for the succeeding Iron Age, Pd II, some modifications have been made by the excavators in the date of the Chalcolithic culture. Two dates are known for Pd II and both are supposed to place the introduction of iron at c. 1100-1000 B.C. On this showing two subdivi-

sions of the Chalcolithic phase has been worked out as follows: (1) early Chalcolithic phase, c. 2100-1700 B.C., and (2) late Chalcolithic phase, c. 1700-1300 B.C. These dates have been postulated without a proper assessment of the corresponding stratigraphic observations and valid cultural changes.

Sub-pd II A marked the introduction of iron and the black-and-red ware. The latter is quite different in fabric and shape from that of Pd I. The ware is thinner and unpainted. A sherd of the NBPW [11.16] was also recovered. Other antiquities included terracotta human and animal figurines, some of which were in the 'archaic' style. A number of tribal and punch-marked coins [3.1] were also found. A circular lead piece with the seal-mark of the ruler Indragupta in Brāhmī of the 3rd century B.C. was a notable find. The other finds were beads of stone, shell and terracotta, copper and iron objects, bone points, shell bangles, etc.

During the next Sub-pd, II B, the black-and-red ware disappeared and was replaced by a plain red ware in which the commonest type consisted of the bowl with incurved rim. Some pots were found painted in black with simple bands. A few bore stamped designs. Notable is the find of a hoard of 3268 punch-marked coins, predominantly of copper and some with silver coating. The other antiquities included terracotta human and animal figurines, iron objects, beads of carnelian, shell and terracotta, shell bangles and bone points. Though no structures were exposed, floors of burnt bricks of the size of $32 \times 12.6 \times 4.5$ cm were traced. A few tiles [14.6.4] were also recovered.

Pd II is dated as follows: II A, c. 700-200 B.C.; and II B, c. 200 B.C.-A.D. 100. Recently an attempt has been made to reassess the date of the Iron Age but further details of supporting stratigraphical, structural and cultural factors are yet to be corroborated.

The next Pd III, seems to be a flourishing period of artistic activity as well as the development of the settlement in general. The dominant ceramic was the Red Polished Ware [11.23] and along with it the bulk of the utilitarian pottery consisted of simple red ware. Four structural phases were recorded. The building materials were stone and burnt bricks ($43 \times 23 \times 7.5$ cm). Some houses had covered brick drains. The notable finds consisted of silver and copper coins of ruling dynasties in and around Eran and in the Malwa region. The coins belong to the W. Kṣatrapas, Nāgas, the Gupta king Rāmagupta and the Indo-Sassanian and Hūṇa rulers. Many clay coin moulds of W. Kṣatrapas, especially of Vijayasena, Rudrasīmha II, Viśvasīmha and Īśvara-mitra, were found. The legend on a clay sealing reads in Gupta Brāhmī *Mahā-daṇḍa-nāyaka-Siṃhanandi*. It emphasizes the strategic nature of Eran as a border town.

A significant find is a circular clay sealing depicting Gaja-Lakṣmī motif with a *prabhāvali* above; in the lower half with is a Brāhmī inscription in Gupta script which reads *Airikiṇe Gomika-ṣa(yā)dhikaraṇasya*. A copper object shows the *kīrtimukha* design. Another is possibly a sword decorated with a carved elephant. Several terracotta figurines, especially female ones, show exquisite modelling. One of the animal figurines, a cow with four udders, is realistically portrayed. Other notable finds include a small stone image of Mahiṣamardini, a silver ring, rectangular and cubical dice [6.7.1] in bone and terracotta, shell bangles, bone points, various types of beads of carnelian, chalcedony, crystal, shell, glass, paste and terracotta a variety of terracotta human and animal figurines and other objects made in copper, iron and stone. This Pd may be dated to c. the 1st and to the 6th century A.D.

The late medieval habitation at Eran has continued down to modern times.

Agrawal, D.P., & Kusangar, S., *Prehistoric Chronology & Radiocarbon Dating in India*, New Delhi. Allchin F.R. & B., 1968, *Birth of Indian Civilization*, pp. 197-8, 215, 218. Bajpai, K.D., 1964, *Sagar through the Ages*, 1964, pp. 6-9, 10-15, 26-31, 35-38; 1967, in *Bull. Ancient Ind. Hist. & Arch.*, 1, pp. 63-4; 1976, in *Prachya Pratibha*, 4, 2, pp. 33-7. Pandey, S.K., 1976, in *Prachya Pratibha*, 2, pp. 54-61. Singh, U., 1962, in *Madhya Pradesh Itihas Parishad*, 4, pp. 41-4; 1967, in *Bull. Ancient Ind. Hist. and Arch.*, 1, pp. 29-38.—G. MARGABANDHU

Eranaluru, Dt Trichur. Megalithic [4.17.10] site with urn burials.

IAR 1967-8.

Eravattaparathy, Dt Palghat. Megalithic [4.17.10] site with cist burials.

IAR 1969-70.

Erangal Point. See K(H)ANDIVLI.

Erkia, Dt Ranchi. Site yielding grey pottery and a small iron chisel.

Patil, D.R., 1963, *Antiquarian Remains in Bihar*, Patna, p. 123.

Ernakuppam, Dt Chingleput. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAR 1966-7.

Erode Taluk, Dt Coimbatore. Cairn circles. (Sites not specified.)

IAR 1960-1.

Erumaivettipalaiyam, Dt Chingleput. Lower Palaeolithic [4.2] site on the river Kortalaray.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras, p. 172.

Erumannur, Dt S. Arcot. Large number of urn burials [4.17.9].

IAR 1961-2.

Eruvassi, Eruvatti, Dt Cannanore. Rock-cut caves, possibly Megalithic [4.17.10].

IAR 1960-1.

Erwa, Dt Chandrapur. Late Stone Age (Mesolithic [4.5]) site.

IAR 1967-8.

Etawah fort, Dt Etawah. Mound yielding sherds of the NBPW [11.16], terracotta animal figurines and medieval pottery.

IAR 1969-70.

Eyyal, Dt Trichur. Rock-cut Megalithic cave [4.17.10].

AI, 12, 1956, p. 104.

Ezhom, Dt Cannanore. Rock-cut caves, possibly Megalithic [4.17.10].

IAR 1960-1.

F

Fachar, Dt Udaipur. Microliths, black-and-red ware and associated pottery [4.14.1].

IAR 1956-7.

Fajilnagar, Dt Deoria. NBPW [11.16] and early historical remains.

IAR 1962-3.

Fanfura, Dt Gurgaon. PGW [11.14] site.

Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.

Farakka, Dt Murshidabad, now famous as the site of a dam across the Ganga, where an extensive habitation site with brick houses, ring-wells [14.15] and brick-lined wells has been exposed by the Farakka Project authorities and where the W. Bengal Dept of Arch. has brought to light early historical pottery [4.18.5], a hoard of punch-marked coins [3.1] and terracotta figurines [17], the female ones with applied and pinhole decorations. The pottery assemblage may go back to the 4th century B.C. but also includes the Red Polished Ware [11.23] of the early centuries A.D. and even some late historical types. It has been identified with Kajangala, the c. limit of Madhyadesa in Buddhist literature, which again has been equated to Hsien Tsang's Kie-chu-hoh-khi-lo, Kie-ching-kie-lo or Kachu-wen-k'ilo.

Beal, S., 1983, *Buddhist Records of the W. World*, New Delhi. Chakrabarti, D.K., 1978, in *Jour. Ind. Hist.*, 56, pp. 27-33.

Faridinagar, Dt Lucknow. NBPW [11.16] and grey ware along with terracotta figurines, sherds of fine grey and black-and-red wares.

IAR 1961-2.

Faridkot (30°40'; 74°48'), Dt Faridkot. See SUTLEJ VALLEY.

Faridpur urf-Mandewala, Dt Saharanpur. OCW [4.12] site.

IAR 1968-9.

Farmana¹, Dt Rohtak. PGW [11.14] and Black-slipped Ware [1.13] site.

Jour. Haryana Studies, 3, 1, p. 4.

Farmana², Dt Sonapat. Pre-Harappa [4.8] remains comparable to Early Siswal were found at Farmana-1 and pre-Harappa material comparable to the degenerate Siswal at Farmana-2. See YAMUNA RIVER.

Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 125.

Farrukhabad, Dt Farrukhabad. The mound at Bhismapur on the w. fringe of the town yielded PGW [11.14], NBPW [11.16], ceramics of the early historical period

and medieval glazed ware. Associated with the PGW were a thin red ware, Black-slipped Ware [11.13] and a small quantity of black-and-red ware [11.6]. Other antiquities included terracotta discs in grey fabric and a broken terracotta figurine.

IAR 1955-6; 1965-6.

Farukhapur, Dt Saharanpur. Early historical site.

IAR 1970-1.

Fatehgarh, Dt Farrukhabad. Hoard of copper objects comprising one anthropomorphic figure, 13 antennae swords and one hooked sword [4.11].

Indian Antiquary, 34, 1905, p. 232.

Fatehgarh Niuwan, Dt Ambala. Mature Harappa [4.9] site.

Bisht, R.S., 1976, in *Arch. Congress & Seminar, 1972*, Kurukshetra.

Fatehpur¹, Dt Amritsar. Grey ware and Black-slipped Ware [11.13].

IAR 1962-3.

Fatehpur², Dt Bijapur. Microliths [4.5].

IAR 1961-2.

Fatehpur³, Dt Damoh. Rock-shelters [13].

Hiralal, *Damoh Deepak*, p. 89.

Fatehpur⁴, Dt Dharwar. Early historical site. See ANVERI.

IAR 1959-60.

Fatehpur⁵, (29°34'; 74°49'), Dt Hissar. Three Rang Mahal [11.24] sites in the vicinity of Fatehpur.

IAR 1967-8.

Fatehpur⁶, Dt Lucknow. NBPW [11.16] site.

IAR 1970-1.

Fatehpur-Gujar, Dt Saharanpur. Harappa [4.9] and OCW [4.12] site.

IAR 1966-7.

Fatehpur Jat, Dt Saharanpur. Harappa [4.9] and OCW [4.12] site.

IAR 1966-7.

Fatehpur Khera, Dt Gurgaon. PGW [11.14] site.

Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.

Fattehpur, Dt Amritsar. Remains of the early historical period of c. 1st-2nd century A.D. including black-painted red ware and the Red Polished Ware [11.23].

IAR 1963-4.

Fattupur-Dher, Dt Gurdaspur. Black-slipped Ware [11.13] and black-and-red and grey wares.

IAR 1961-2.

Feringi Dibba, Dt Guntur. Neolithic drill core [4.6.8].

Footo, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Feroke, Dt Malapurram. Megalithic rock-cut cave with sarcophagus [4.17.10].

AI, 12, 1956, p. 112.

Ferozpur, Dt Meerut. Red ware of Sunga-Kushan assemblage and medieval ware.

IAR 1962-3.

Firozabad, Dt Saharanpur. PGW [11.14] and associated wares.

IAR 1963-4.

Firozpur (29°28'; 74°57'), Dt Hissar. Rang Mahal [11.24] site.

IAR 1967-8.

Fort-Hill, Dt Bellary. Palaeoliths [4.2] and neoliths

[4.6.8] were found.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Fraserpet, Dt Coorg. Megalithic site with port-holed chambers [4.17.8].

Proc. Asiatic Soc. Bengal, 1869, pp. 54-9.

French Rocks (Pandavapura), Dt Mandya. Pottery, etc., in rock-shelters [13].

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 73.

Futipal, Dt Ujjain. Chalcolithic site yielding Kayatha Ware [11.7].

IAR 1966-7.

G

Gadabadi, Dt E. Nimar. Microliths [4.5].

IAR 1960-1.

Gadabirghar, Dt Ballia. Black-and-red Ware [11.6.3] and NBPW [1.16].

IAR 1963-4.

Gadachunadadi, Dt Panch Mahals. Microlithic [4.5] site.

Sonawane, V.H., 1976, in *Arch. Congress & Seminar, 1972*, Kurukshetra.

Gadaghat, Dt Jabalpur. Microliths [4.5].

IAR 1959-60.

Gadahiri, Dt Chandrapur. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1961-2.

Gaddamankampalli, Dt Kurnool. A broken neolith [4.6.8], microlithic fluted cores, blades and waste flakes, black-painted red ware, all evidently Chalcolithic [4.14.7] and Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1963-4.

Gaddedinne, Dt Bijapur. Mesolithic [4.5] site yielding scrapers, awls and points.

IAR 1972-3.

Gaddi-ka-Than, Dt Jaunpur. Sherds of the NBPW [11.16], Black-slipped Ware [11.13] and associated red ware.

IAR 1965-6.

Gaddikeri, Dt Bellary. Chalcolithic [4.14.8] site.

Paddayya, K., 1973, *Investigations into the Neolithic Culture of s. India*, Leiden.

Gadekal, Dt Anantapur. Neolithic habitation [4.6.8] site. Early historical pottery was also found. See AKKAMMAKONDA.

IAR 1965-6.

Gadh, Dt Panch Mahals. Early historical settlement yielding Black-and-red Ware [11.15], Red Polished Ware [11.27], brick structures, beads, bangles and terracotta objects.

Sonawane, V.H., 1976, in *Arch. Congress & Seminar, 1972*, Kurukshetra.

Gadha¹, Dt Allahabad. Late Stone (Mesolithic [4.5]) site.

IAR 1963-4.

Gadha², Dt Udaipur. Series III (Mesolithic [4.5]) tools.

IAR 1959-60.

Gadhada¹, Dt Bhavnagar. Harappa [4.9] site. See HANUMAN TIMBA.

IAR 1971-2.

Gadhada², Dt Rajkot. Three mounds in the Aji valley with coarse corrugated ware and Harappa [11.3] Ware.

*IAR 1960-1.

Gadharra, Dt Rajkot. Harappa [11.3] Ware.

IAR 1957-8.

Gadharona, Dt Saharanpur. OCW [11.5], grey ware, barrel beads of banded agate and terracotta figurine.

IAR 1963-4.

Gadh-Chundadi, Dt Panch Mahals. Early historical [4.18.2] site.

IAR 1971-2.

Gandhehundadi, Dt Panch Mahals. Mesolithic [4.5] site.

IAR 1970-1.

Gadhinglaj, Dt Kolhapur. Megalithic site with passage tombs [4.17.6].

IAR 1966-7.

Gadhiyo, Dt Rajkot. Early historical [4.18.2] site near Navagadh.

IAR 1958-9.

Gadiganuru, Dt Bellary. Palaeolithic and Neolithic [4.6.9] site.

Foote, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, pp. 77-8.

Gadi Katauna, Dt Monghyr. Middle Palaeolithic [4.3] tools, blades and microliths.

Burman, D.K., 1976, in *Arch. Congress & Seminar, 1972*, Kurukshetra.

Gadrigaon, Dt Ahmadnagar. Series II (Middle Palaeolithic [4.3]) tools, microliths and sherds of thick grey ware.

IAR 1960-1.

Gadisommal, Dt Bijapur. Chalcolithic [4.14.8] site. See ALMEL.

IAR 1959-60.

Gadka-Chak, Dt Bhagalpur. NBPW [11.16].

IAR 1963-4.

Gadriawas, Dt Udaipur. White-painted black-and-red ware [11.6.2] site in the Berach valley.

IAR 1962-3.

Gagal (32°5'; 76°15'), Dt Kangra. Lower Palaeolithic [4.2] tools were found on the terraces of the river MARKANDA.

Gagsina, Dt Karnal. Late Harappa [4.10] site comparable with MITATHAL II B. See YAMUNA RIVER.

Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 125.

Gahala-Shahpur, Dt Varanasi. Painted rock-shelters [13] on the bank of the Karamnasa.

IAR 1961-2. Mitra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad, p. 55.

Gahar Wargaon Ghat, Dt Mirzapur. Lower and Middle Palaeolithic [4.2, 3] and microlithic [4.5] site.

IAR 1959-60.

Gaisabad, Dt Dhule. Lower Palaeolithic [4.2] and Series II (Middle Palaeolithic [4.3]) site on the river Bearma.

IAR 1958-9.

Gajadharpur¹, Dt Allahabad. Late Stone Age (Mesolithic [4.5]) site on the Baga-ka-Nala.

IAR 1969-70.

Gajadharpur², Dt Ghazipur. Historical site.

IAR 1962-3.

Gajaga, Dt Kolar. Megalithic stone circles [4.17.8].

IAR 1970-1.

Gajanur, Dt Mysore. Megalithic cist burials [4.17.8].

IAR 1961-2.

Gajendragad, Dt Dharwar. Megalithic urn burial [4.17.8] site.

IAR 1964-5.

Gajjalakonda, Dt Nizambad. Megalithic [4.17.7] site.

Ghosh, N.C., 1972-3, in *Puratattva*, 6, pp. 74-5.

Gajraun, Dt Jhalawar. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1958-9.

Galaganatha, Dt Dharwar. Megalithic pottery [11.15.3] and a few sherds of the Neolithic grey ware of BRAHMA-GIRI fabric.

IAR 1966-7.

Galamb, Dt Wardha. Series II (Middle Palaeolithic [4.3]) site.

IAR 1959-60.

Galaru, Galeru, valley, Dt Kurnool. In the Galaru valley, lying between Nandyal and Atmakuru, a rich Lower Palaeolithic industry on quartzite was found, comprising Abbevillio-Acheulian bifaces and plain-platform flake tools [4.2]. See BILLA SURGAM.

IAR 1956-7.

Galath, Dt Fatehpur. PGW [11.14] and NBPW [11.16].

IAR 1965-6; 1967-8.

Galdahawa, Dt Allahabad. The two nullahs joining the BELAN near the village Galdahawa yielded Early, Middle and Late Stone Age (Lower and Middle Palaeolithic [4.2, 3] and Mesolithic [4.5]) tools.

IAR 1966-7.

Galeru valley. See GALARU VALLEY.

Galil, Dt Kheda. Mesolithic [4.5] and early historical site.

IAR 1971-2.

Galkund, Dt Surat. Early, Middle and Late Stone Age (Lower and Middle Palaeolithic [4.2, 3] and Mesolithic [4.5]) site.

IAR 1967-8.

Galudih, Dt Singhbhum. Lower Palaeolithic [4.2] site. See DHULBHAM.

Gamakar, Dt Vidisha. Lower Palaeolithic [4.2] site on the Betwa.

IAR 1958-9.

Gama-ki-Dhani, Dt Ganganagar. RANG MAHAL Ware [11.24], terracotta and shell bangles and microliths.

Unpublished.

Gamanpura, Dt Udaipur. Microlithic [4.5] site in the Berach valley.

IAR 1962-3.

Gambhir, Dt E. Nimar. Microliths [4.5].

IAR 1960-1.

Gambhiri river, Dt Chittaurgarh. The section of the river downstream from the road-bridge near Chittaur yielded Early Stone Age (Lower Palaeolithic [4.2]) tools. Among the sites are: Morwan, Ratanzana and Kalyanpura.

IAR 1956-7; 1961-2.

Gamri, Dt Bharatpur. PGW [11.14] site.

IAR 1971-2.

Gandageri, Dt Dharwar. Megalithic urn burial [4.17.8] site.

IAR 1964-5.

Gandhara, Dt Broach. Early historical [4.18.2] site.

IAR 1965-6.

Gandhauli, Dt Sitapur. Flat celts of copper [4.11].

Arch. Congress & Seminar, 1972, Kurukshetra, 1976, p. 98.

Gandhra, Dt Rohtak. Site yielding late Harappa [4.10] remains, black-and-red pottery [11.6], PGW [11.14] and NBPW [11.16].

Jour. Haryana Studies, 3, 1, p. 5.

Gandi, Dt Dhule. Palaeolithic [4.2-4] tools.

IAR 1959-60.

Gandiganamala, Dt Krishna. Site with dolmens [4.17.7].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Ganesh Nallah, Dt E. Nimar. Series I (Lower Palaeolithic [4.2]) tools were found in the gravels. Surface exploration yielded Middle Palaeolithic [4.3] tools as well.

IAR 1966-7. Sankalia, H.D., 1974, *Prehistory & Protohistory of India & Pakistan*, Poona.

Ganeshpur, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1963-4.

Ganga valley, Dts Allahabad, Pratapgarh and Varanasi, explored by G.R. Sharma and his team of the Univ. of Allahabad. Over an area of 10500 sq km covering parts of Dts Allahabad, Pratapgarh and Varanasi hundreds of Stone Age sites ranging from the late Upper Palaeolithic [4.4] to the geometric Mesolithic [4.5] have been located. The noteworthy of these are: JAMUNIPUR, KURHA, BICHHIA BHIKHAMPUR, MAHRUDIHA, ... SARAI NAHAR RAI, HARAH-BHITULI, PATUPUR, etc., in Dt Pratapgarh and BANKAT-BHIKHARIRAMPUR and GARWA, in Dt Varanasi. The tools collected from these sites include scrapers, blades, blunted backs,

points, trapeze (Bichhia) and triangles (Sarai Nahar Rai) fashioned on chert, chalcedony and quartz. Cores, flakes and *debitage* constitute a higher percentage than the finished tools indicating thereby that these were locally manufactured. As the raw material is not locally available in the Ganga valley it could have been transported from the Vindhyan area.

It is of special significance that these tools have been found in a definite geological context. The available evidence indicates that the first arrival of the stone Age man in the Ganga valley coincided with the last stage of the *Bhagar* formation, the old alluvium . . .

The archaeological investigations in Dts Allahabad, Pratapgarh and Varanasi have imparted valuable information about the shifting in the course of the Ganga in ancient times. The area to the n. measuring about 55 km from the present water channel of the Ganga is characterized by a large number of horse-shoe lakes. From the nature of these lakes it is clear that these represent the stages of withdrawal of the Ganga from 55 km n. to its present course and the ancient meanders of the river were left isolated and were converted into horse-shoe lakes before the end of the Pleistocene [9.8.2].

Explorations have led to the location of a number of Mesolithic stations on the banks of the horse-shoe lakes, e.g., SARAI NAHAR RAI, HARAH-BHITULI, PATUPUR and RAJAPUR in Pratapgarh and BANKAT-BHIKHARI-RAMPUR and GARWA in Varanasi. The availability of games, birds and water-creatures in the lakes might have induced the Palaeolithic hunters to come to the n. of the Ganga from their original habitat of the Vindhyas. But as the Ganga valley lacked stone for manufacturing tools, these new-comers would have been compelled to return to the Vindhyas for getting the raw material. In rainy season the Ganga valley might have been inhospitable to these early hunters. Under the nature of the circumstances the coming of these men to the Ganga valley would have been seasonal.

Quoted with minor alterations from Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad, pp. 58-60. Sharma, G.R., 1975, Presidential Address, Prehistoric Society, Delhi, reprinted in K.C. Chattopadhyaya Memorial Vol., Allahabad, 1975.

Ganga-danga, Dt Burdwan. Microliths, painted black-and-red and red wares [4.14.4].

IAR 1962-3.

Gangadevanahalli, Dt Dharmapuri. Megalithic [4.17.9] site with dolmenoid cists and circle stones.

IAR 1967-8.

Gangadhar¹, Dt Jhalawar. Terracotta ring-wells [14.15].

IAR 1960-1.

Gangadhar², Dt Ujjain. Kayatha Ware site. See 11-7.

Gangagarh, Dt Ganganagar. PGW [11.14] and Rang Mahal site [11.24] site.

Unpublished.

Gangakhed. See Godavari valley.

Gangaleri, Dt Dharmapuri. Megalithic cists [4.17.9].

IAR 1964-5.

Gangamangala, Dt Mysore. Megalithic cist burials [4.17.8].

IAR 1961-2.

Gangana, Dt Karnal. Late Harappa [4.10] site comparable with MITATHAL II B.

Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 125.

Ganganadoddi, Dt Mysore. Black-and-red [11.15.3] and Russet-coated Painted Wares [11.22].

IAR 1961-2.

Ganganir-Math, Dt Midnapur. Acheulian handaxes [4.2], Middle and Late Stone Age (Middle Palaeolithic [4.3] and Mesolithic [4.5]) tools, besides a Neolithic celt [4.6.5].

IAR 1964-5.

Gangapur¹. See GODAVARI VALLEY.

Gangapur² (17°10'; 76°31'), Dt Gulbarga. Late Stone Age (Mesolithic [4.5]) sites in the Amarja valley.

Nagaraju, S., 1971, in Prof. K.A. Nilakanta Sastri Felicitation Vol., Madras.

Gangapur³, Dt Nagpur. Megalithic [4.17.6] site. See TAKALGHAT and KHAPA.

IAR 1968-9.

Gangapur⁴, Dt Nasik. In the river section of the GODAVARI near Gangapur Lower Palaeolithic [4.2] implements were found. These included handaxes, ovates, cleavers, and flakes. It appears that the area was a factory site.

IAR 1956-7; 1959-60; 1969-70.

Gangargaon, Dt Ahmadnagar. Chalcolithic [4.14.5] site.

IAR 1959-60.

Gangasanpalli, Dt Nalgonda. Megalithic cairn circles [4.17.7].

IAR 1961-2.

Gangasinghpur, Dt Ganganagar. Non-descript sherds. Unpublished.

Gangauli, Dt Gurgaon. PGW [11.14] site.

Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 126.

Gangavaram Hills, Dt S. Arcot. Megalithic site with dolmens [4.17.9].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Gandhar, Dt Kota. Sherds of the Malwa Ware [11.10].

IAR 1966-7.

Gangipata, **Ganjipatta**, Dt Chitradurga. Megalithic [4.17.8] site with stone circles.

Seshadri, M., 1956, *Stone-using Cultures of Pre- & Proto-historic Mysore*, London, p. 63.

Gangta, Dt Dhule. Chalcolithic [4.14.5] site on the Tapti.

IAR 1958-9.

Ganiganur, Dt Mysore. Megalithic [4.17.8] site.

Information from C. Krishnamurthy through A. Sundara.

Ganj, Dt Varanasi. Black-and-red Ware [11.6.3] site.

IAR 1962-3.

Ganja-Pahar valley, Dt Dhanbad. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1961-2.

Ganjapur, Ganjpur, Dt Bir. Microliths [4.5] were collected on the surface at the site, a village on the right bank of the Manjra, a tributary of the Godavari.

IAR 1971-2.

Ganjibhovo, Dt Ahmadnagar. Tools of Series II (Middle Palaeolithic [4.3]) and microliths [4.5] and sherds of thick grey ware were collected as also early historical pottery like black-and-red and red wares.

IAR 1960-1.

Ganjipatta. See GANGIPATA.

Ganogiri, Dt Garo Hills. Stone tools including Hoabinhian, cores, flakes, axes, adzes, hoes, long narrow celts, grinding stones and potsherds predominantly grey in colour [4.6.6].

IAR 1966-7.

Ganwaria, Ganwari, (27°26'; 83°7'), 1 km s.-w. of PIPRAHWA, plausibly identified with Kapilavastu, the capital of the Śākya (Mitra, 1971). This identification has been confirmed by the excavation of the writer (Srivastava, 1977, 1978) which yielded terracotta sealings and the lid of a pot with the legend *Kapilavastu*. The excavation also brought to light extensive structural remains and a rich assemblage of antiquities. The occupational deposit can be divided into four Pds: Pd I (c. 800 to 600 B.C.), with Black-slipped Ware [11.13], fine grey ware, red ware vases and dishes with red rim and greyish bottom associated elsewhere with the PGW [11.14], red ware bowls and dishes with the mirror-like polish occasionally painted in black dots and circles; Pd II (c. 600 to 200 B.C.), with the NBPW [11.16], red ware painted in black horizontal bands and other associated wares, punch-marked coins [3.1] and a limited number of terracotta figurines; Pd III (200 B.C. to the beginning of the Christian era); and Pd IV Kushan (beginning of the Christian era to the 4th century A.D.) with punch-marked, cast and Kushan coins and terracottas typical of the period.

The houses of Pd I have mud walls with roofs supported on wooden post, a post being found in position. As a safeguard against inundation the ground-level was raised by piling up yellow compact clay for subsequent occupation. Amongst the burnt brick structures of Pds II, III and IV two massive complexes, in five phases and with a projected bastion-like entrance towards the e., are most impressive. The larger complex is about 30 m sq and the smaller one towards n.-w. 26 m sq. The central courtyard of the smaller complex is paved with burnt bricks with a well in the n.-w. corner. The floors are made

of brick jelly and brickbats. Drainage from the central courtyard is provided by a covered drain of burnt bricks with an outlet towards the s.-w. end. A ring-well of Phase I with a diameter of 85 cm is noticed in the n.-e. gallery of the larger complex. Other secular structures include a house complex and a large structure with several rooms, two courtyards in the centre and a long drain near the s.-e. end of the larger complex, a house complex on the n. fringe of the mound, a cistern-like structure 3 m deep and a very deep well.

Of the four shrines the second one, which yielded a large number of terracotta Buddha heads, is the most significant. All the shrines, constructed over the earlier house complexes belong to Pd IV. The religious structures are constructed over earlier house complexes. Besides heads of Buddha, Buddha seated on double lotus and holding the fingers of his left hand with the right, a head with fan-shaped head dress, warriors and drummers, mother and child, ornamented female figurines with elaborate coiffure and decorated anklets, dancing figures, figures with elaborate drapery, a three-eyed head, a demon devouring an animal and animal figurines constitute the rich variety of terracottas. A stone disc depicting bull, elephant and lion interspersed by *cakra* as on the abacus of Aśokan pillars, beads of glass, terracotta and semiprecious stones, stone weights, chisels, sickles, arrow- and dagger-heads, knives and a razor iron, copper bowls, glass bangles and a highly polished legged stone quern with a pestle are the other important antiquities. Two coin hoards, one of 64 silver punch-marked and the other of 37 copper coins, have been found in small pots.

IAR 1961-2. Mitra, D., 1971, *Buddhist Monuments*, Calcutta, pp. 247-53. Srivastava, K.M., 1977, in *Vishveshvaranand Indological Jour.*, 15, 1; 1978, *Kapilavastu*, Nagpur.—K.M. SRIVASTAVA

Gara, Dt Saharanpur. OCW [11.5] site. } ✓

IAR 1966-7.

Garadi, Dt Singbhum. Cemetery consisting of 12 urn burials [4.17.4]. See DHALBHUM.

Garbardi, Dt E. Nimar. Palaeoliths [4.2-4] and microliths.

IAR 1959-60.

Garbata-Raja, Dt Mirzapur. Megalithic [4.17.3] site.

IAR 1969-70.

Garbo, Dt Rajkot. Early historical site near Sanali.

IAR 1958-9.

Garh, Dt Saharanpur. Site yielding OCW [11.5]. ✓

IAR 1965-6.

Garha-Gopalapur, Dt Jaunpur. NBPW [11.16], Black-slipped Ware [11.13] and red ware.

IAR 1965-6.

Garha-Kota, Dt Dhule. Series II (Middle Palaeolithic [4.3]) site on the river Sonar.

IAR 1958-9.

Garhbogharh, Dt Bastar. Middle Palaeolithic [4.3] site

on the Narangi river.

Madhya Pradesh Sandesh, 13 June, 1970, p. 10.

Garhchandia, Dt Bastar. Middle and Upper Palaeolithic site [4.3, 4].

Madhya Pradesh Sandesh, 13 June, 1970, p. 10.

Garhchiroli, Dt Chandrapur. Late Stone Age (Mesolithic [4.5]) site.

IAR 1970-1.

Garhi-Morila, Dt Sagar. Pointed-butt polished stone axes [4.6].

Brown, J.C., 1917, *Catalogue of Prehistoric Antiquities in the Indian Museum at Calcutta*, Simla.

Garhkota, Dt Sagar. Middle Palaeolithic [4.3] site.

AI, 17, 1961, p. 4.

Garhwa¹, Dt Allahabad. Pointed-butt polished stone axes [4.6.4].

Brown, J.C., 1917, *Catalogue of Prehistoric Antiquities in the Indian Museum of Calcutta*, Simla.

Garhwa², Dt Varanasi. Upper Palaeolithic [4.4] site yielding blades, burins, parallel-sided blades, blunted blades, points, scrapers, lunates, cores and flakes. [Same as GARWA?]

Sharma, G.R., 1975, Presidential Address, Prehistoric Society, Delhi.

Garikpadu, Dt Krishna. Site with dolmens [4.6.8].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Garua, Dt Udaipur. Microlithic [4.5] site. See BARA BEDLA.

IAR 1956-7.

Garudanahalli, Dt Kolar. Megalithic [4.17.8] site with post-holed cists and menhirs.

Indian Antiquary, 11, 1882, pp. 86-8. Seshadri, M., 1956, *Stone-using Cultures of Pre- & Proto-historic Mysore*, London, p. 62.

Garudanapalya, Dt Kolar. Megalithic [4.17.8] site with a few cists.

Seshadri, M., 1960, *Report on the Jadigenahalli Megalithic Excavations*, Bangalore, p. 1.

Garwa, See GANGA VALLEY. (Same as GARHWA?)

Gas, Dt Thana. The site yielded microliths and pottery assignable to the early historical times.

IAR 1955-6.

Gasiabad, Dt Damoh. Lower and Middle Palaeolithic [4.2, 3] site.

AI, 17, 1961, pp. 5-36.

Gatakhera, Dt Jabalpur. Painted rock-shelters [13].

IAR 1961-2.

Gatewadi, Dt Ahmadnagar. Microliths, possibly or Chalcolithic [4.14.5] association, and sherds of thick grey ware were collected. Early historical pottery at the site was characterized by black-and-red and red wares.

IAR 1960-1.

Gatickamadanahalli, Dt Kolar. Megalithic [4.17.8] stone circles.

IAR 1972-3.

Gaudageri, Dt Dharwar. Megalithic burial and habitation [4.17.8] site.

IAR 1963-4.

Gaudar, Dt Raichur. Ash-mound [14.3].

Allchin, F.R., 1963, *Neolithic Cattle-keepers of S. India*, Cambridge, pp. 63-6. Foote, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 95. *Jour. Geological Surv. Hyderabad*, 5, 1.

Gauhati, Dt Kamrup. The adjoining areas of Kamakhya hills, Navagraha and Sarania hills yielded Neolithic pottery. The pottery is distinguished by cord and basket-impressed designs on the exterior [11.1.4]. See also AMBARI.

IAR 1965-6.

Gaurimedu, Pondicherry. Megalithic [4.17.9] site.

Casal, J.M., 1956, *Site urbain et sites funéraires des Environs de Pondichéry-Virampatnam—Moutrapaleon, Souttakyen, Paris*.

Gauriya, Dt Jabalpur. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1959-60.

Gaush-Khan-ki-garhi, Dt Saharsa. The site 3 km n. of Banagaon was of the late Gupta period.

IAR 1961-2.

Gawasi (Ashokaban), Dt Nagpur. Late Stone Age (Mesolithic [4.5]) site.

IAR 1970-1.

Gazulabanda, Dt Nalgonda. Excavation revealed the existence of *stupa-vihāra*, complex showing two phases of structural activity with a marked variation on plan.

IAR 1970-1.

Gebia, Dt Junagadh. Ksatrapa period site.

IAR 1963-4.

Geherra-khurd, Dt Agra. PGW [11.14] site.

IAR 1959-60.

Gevardha, Dt Chandrapur. The site on the Satti Nullah yielded blades and cores [4.4].

IAR 1968-9.

Gevrai, Dt Aurangabad. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1961-2.

Ghadwal, Dt Rohtak. Ghadwal-I (Kheda) yielded Harappa Ware [11.3] and Ghadwal-II (Jogianala) pre-Harappa [11.2], PGW [11.14], Black-slipped Ware [11.13] and early historical wares. Early historical and Rang Mahal pottery [11.29] was found at Ghadwal-III.

Jour. Haryana Studies, 3, 1, p. 3.

Ghaga river, Dt Broach. Five Microlithic [4.5] sites were located along the river Ghaga, a tributary of the river Kim.

IAR 1967-8.

Ghaggar valley. The river Ghaggar rising from the Simla Hills near Dagshai and passing by Sirmaur debouches into the plains near Kalka in Dt Ambala. In its downward course it passes through Dts Patiala, Sangrur, Bhatinda, Hissar and Sirsa. Today it is joined by the Tangri, Markanda and Sarasvati from the e. and the Patiala and Sirhind from the w. Down Ottu in Dt Sirsa its course widens and is well demarcated. It perhaps represents a continuation of the Rangoi bed (the old dry bed of the Sarasvati) which anciently joined the Ghaggar

near Ottu. The lower joint course of the dry Ghaggar and the Sarasvati, now generally known as the Ghaggar but perhaps anciently as the SARASVATĪ, passes in Rajasthan by HANUMANGARH (29°35'; 74°21'), and KALIBANGAN to Suratgarh (29°19'; 73°57'), 5 km above which it is joined by another dry bed from the e., identified with the ancient DRŚADVATĪ (Chautang). Further w. near Anupgarh (29°7'; 73°60') near the Pakistan border it is joined by the dry bed of the Naiwala from the n. Thus the valleys of the Sarasvati or Ghaggar practically drains the entire *malwa* tract of Punjab and the *bangar* and *bagar* tracts of Haryana. Beyond the Indian border the river is represented by the dry bed of the Hakra or Wahind and of e. Nara in Sind flowing s.-w. into the Rann of Kutch.

Explorations in the upper Ghaggar valley were initiated by the writer in 1962 and a number of late Harappa and PGW sites were located. In 1964 SARANGPUR (30°50'; 76°50') yielded a non-Harappa and pre-Harappa culture in the valley. In 1971 and onwards SANGHOL was excavated by S.S. Talwar and R.S. Bist who found late Harappa [4.10] deposits over a PGW [4.15] settlement (*IAR 1970-1*, p. 30). CHANDIGARH (30°45'; 76°50'), excavated by the Punjab University, the ASI and the Punjab Department of Arch. in 1971, yielded a Harappa inscription on a pot and typical Harappa pottery in addition to the late Harappa ware. In the course of the writer's explorations BHUDAN near Malerkotla in Dt Sangrur was excavated in 1975 and it corroborated the existence of a pre-Harappa culture [4.8] of KALIBANGAN I affiliations in Punjab and evidenced the survival and co-existence of the pre-Harappans through the mature and late Harappa times. A few other sites such as ROHIRA yielded typical mature Harappa traits such as the perforated jar, goblet, beaker, chert blades terracotta triangular cakes [6.27], etc. GHURAM and BURJ were excavated by G.B. Sharma recently. The latter yielded the typical BARA ware, while in the lowest levels of GHURAM were recovered a few sherds of the PGW. Recently J.P. Joshi of ASI excavated at DADHERI (30°40'; 76°15') in Dt Sangrur, establishing an overlap between the late Harappa and the PGW cultures as at BHAGWANPURA².

The above investigations have established the following sequence of cultures in the Ghaggar basin: Pd I, pre-Harappa (BHUDAN I A, SARANGPUR); Pd II A, Harappa (BHUDAN I B, ROHIRA); Pd II B, late mature Harappa (CHANDIGARH); Pd II C, late Harappan (BHUDAN I C, CHANDIGARH, BURJ, DADHERI I, SANGHOL I); Pd III, PGW (DADHERI II, SANGHOL II); Pd IV, NBPW (SANGHOL III, GHURAM I); Pd V, early historical, (SANGHOL IV, GHURAM II); and Pd VI, late historical, early medieval (SANGHOL V, GHURAM III).

The following are the important sites in the upper

Ghaggar basin (ES = Early SISWAL; H = Harappa; LH = late Harappa; LS = Late Siswal; PGW = Painted Grey Ware): DADHERI, Dt Ludhiana (LH, PGW); BHUDAN, Dt Sangraur (ES, LS, LH); ROHIRA Dt Sangraur (H, LH); SANGHOL, Dt Ludhiana (LH, PGW); CHANDIGARH (H, LH); SARANGPUR, Dt Rupnagar (ES); and BURJ, Dt Patiala (LH).

Bist, R.S., 1976, in *Arch. Congress & Seminar 1972*, Kurukshetra (for Sanghol and Chandigarh); Sharma, Y.D., 1976, in *ibid.* Suraj Bhan, 1967, in *Research Bull. (Arts)*, Punjab University, pp. 1-9; 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra.—SURAJ BHAN

Ghalibpur, Dt Bulandshahr. PGW [11.14] and plain grey ware.

IAR 1959-60.

Ghamoor Ghat, Dt Sangraur. PGW [11.14] site.

Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 124.

Ghamoorkheri, Dt Kurukshetra. Late Harappa [4.10] site.

Kurukshetra Univ. Res. Jour., 30, 1976, pp. 28-9.

Ghana Khandi, Dt Saharanpur. Harappa [4.9] and OCW [4.12] site.

IAR 1966-7.

Ghanauti, Dt Ambala. PGW [11.14] site.

AI, 10 & 11, 1954 & 1955, p. 139.

Ghandliavate, Dt Bijapur. Chalcolithic [4.14.8] site. See ALMEL.

IAR 1959-60.

Ghandwa, Dt W. Nimar. Microliths [4.5].

IAR 1958-9.

Ghangapur, Dt Gulbarga. Two ancient mounds, one of historical period and the other seemingly a burial mound.

Jour. Geological Surv. Hyderabad, 5, 1, p. 56.

Ghantasala, Dt Krishna. The finds from the site included the Black-and-red Ware [11.15.3] and some fragments of the beaked dish. Previous collection from the site contained two Roman coins and a number of Sātavāhana coins [3.1]. The early Buddhist *stūpa* is well-known.

IAR 1955-6. Madras Arch. Report, 18 June, 1892, p. 2.

Ghantasila, Dt Mayurbhanj. Series I (Lower Palaeolithic [4.2]) tools.

IAR 1957-8.

Ghantwar, Dt Junagadh. Red Polished Ware [11.23].

IAR 1957-8.

Gharava, Dt Datia. Rock-shelter [13].

IAR 1971-2.

Ghargaon, Dt Ahmadnagar. Microlithic [4.5] site.

IAR 1953-4.

Ghari, Dt Amritsar. Black-slipped Ware [11.13] and black-and-red and grey wares.

IAR 1963-4.

Ghaswa, Dt Jind. Ghaswa-1 yielded pre-Harappa [4.8] and late Harappa [4.10] material, while Ghaswa-2 and -3 are PGW [4.15] sites.

IAR 1966-7. Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 124.

Ghat, Dt Purulia. Microliths [4.5].

IAR 1959-60.

Ghata, Dt Bharuch. Middle and Late Stone Age (Middle Palaeolithic [4.3] and Mesolithic [4.5] site.

IAR 1969-70.

Ghata-Bilod, See CHAMBAL VALLEY.

Ghatlak, Dt E. Nimar. Rock-shelter [13] with Middle and Late Stone Age tools (Middle Palaeolithic [4.3] and Mesolithic [4.5]) in the vicinity.

IAR 1961-2.

Ghatakhara, Dt Jabalpur. Microliths [4.5].

IAR 1960-1.

Ghatamwala, Dt Bulandshahr. Grey ware.

IAR 1959-60.

Ghataprabha valley (approximately confined to 15°45' to 16°30' and 74°05' to 75°50'), the river, a major s. tributary of the Krishna, with a total course of about 250 km, rising near the edge of the W. Ghats at a place called Ramghat at an altitude of 900 m above mean sea-level, 40 km west of Belgaum (15°52'; 74°34'). The river, with an average gradient of 1.18 m per km, the major irregularity in its course being observed in the form of a water fall of 60 m in its middle reaches near Gokak (16°11'; 74°52'), follows in general an e. course for about 210 km and then suddenly takes a n.-e. turn to meet the Krishna. Geologically the Ghataprabha basin is covered by three main formations of the peninsula, viz. Archaeans, Kaladgis and Deccan Traps, of which the last two are of widespread occurrence; the former in the middle and lower reaches and the latter in the source region of the river. The Kaladgis are made up of quartzites, limestones, sandstones, shales, conglomerates, etc. Of these the quartzites form the prevalent rock type. They are highly resistant to weathering and appear as steep cliffs and escarpments. The Deccan Traps occur as horizontally bedded lava flows.

The Pleistocene [9.8.2] deposits in the form of alluvial deposits are well-preserved in the basin. The Older alluvium is made up of bouldery, pebbly or sandy pebbly gravels and associated silts of about 10 to 15 m thickness. The lateral extent varies in different stretches of the valley and especially in the lower reaches it is about 1 to 1.5 km on either bank. The younger Sub-recent alluvium composed of dark-brown silts is found resting against the older deposits but at places it has partially or completely replaced the older deposits. Two terrace surfaces are observed in the basin. The top surface of the Older alluvium has weathered into black soil and forms a distinct terrace surface at a height of about 10 to 15 m above the normal water-level. The younger inset-type terrace of Sub-recent alluvium is found abutting the older one and occurs at a height of about 5 to 6 m.

The Ghataprabha basin provides ample evidence of

lithic industries like the neighbouring basin of the MALAPRABHA. Foote, 1876, did not report any Stone Age site on the Ghataprabha proper but has given detailed account of alluvial deposits exposed in the basin. Fossil remains of the rhinoceros, named as *Rhinoceros deccanensis* by Foote, were recovered from the alluvium near Gokak. Explorations near BAGALKOT (16°12'; 75°45') were undertaken by Sankalia of the Deccan College and by Malwad of the Kannada Research Institute and a few sites yielding lithic assemblages were reported (Sankalia, 1974). A large collection of Middle Palaeolithic tools [4.3] from the same region was made by Chapghar and Banerjee mostly from the modern bed of the river (*ibid.*). A detailed geomorphic and prehistoric investigation was undertaken in the Ghataprabha basin by Pappu, 1974, and evidence of the lithic industries brought to light from more than 20 sites.

The Palaeolithic sites in the basin are concentrated in the region occupied by the rocks of Kaladgi formations, especially in its lower reaches around BAGALKOT town. Among the sites discovered, ANAGWADI (16°15'; 75°40') is unique as it forms a channel-occupation site of the Lower Palaeolithic [4.2] industry occurring in a primary context. The pebbly gravel overlying the laterite formation is the horizon of this industry. A small-scale excavation conducted in the gravel has yielded an assemblage showing characters of the Mid-Acheulian [4.2] tradition. The tool-kit consists of varied and numerous forms of handaxes and cleavers and also other tool types like choppers, scrapers, discoids, etc. Tools are fashioned on locally available quartzites. The pebbles, pebble flakes and flakes derived from natural blocks of quartzites have been utilized in preparing tools. Tools made on flakes are present in large numbers. They are almost fresh thereby suggesting that they were manufactured in the close vicinity.

The sites of Middle Palaeolithic industry are also confined in the region occupied by rocks of Kaladgi formations. Chert, a preferred raw material of this industry, is available in plenty in limestone formations. An open air factory site at KOVALLI (16°15'; 75°37') is important among the sites discovered. It is essentially a flake industry, as nearly 80 to 90 per cent of tools are made on flakes. The assemblage from YADWAD (16°15'; 75°13') is predominantly made on blades. They include scrapers, points, flakes, worked flakes, simple and backed blades, a few burins and cores and are comparable to the Upper Palaeolithic industry [4.4] found in other parts of peninsular India.

The list of some other important sites yielding lithic assemblages in different parts of the basin is given below.

Lower Palaeolithic: NESARI (16°04'; 74°20') AJNAPUR (16°08'; 74°20'); SUTKATTI (16°03'; 74°31'); CHIN-

CHKHANDI (16°16'; 75°17'); METGUD (16°15'; 75°15'); KATARKI (16°15'; 75°30'); MACHAKHUR (16°15'; 75°25'); HALKI (16°14'; 75°15'); BHANTNUR (16°15'; 75°26'); KHAJJIDONI (16°10'; 75°25'); HONIHALLI (16°12'; 75°41'); SINDGI (16°12'; 75°44').

Middle Palaeolithic: MAMDAPUR (16°06'; 74°55'); LOLSAR (16°09'; 74°50'); KUNDARGI (16°05'; 74°48'); CHINCHKHANDI (16°16'; 75°17'); KATARKI (16°15'; 75°30'); MACHAKHUR (16°15'; 75°25'); HALKI (16°14'; 75°15'); BHANTNUR (16°15'; 75°26'); KHAJJIDONI (16°10'; 75°25'); HONIHALLI (16°12'; 75°41'); SINDGI (16°12'; 75°44').

Footo, R.B., 1876, in *Mem. Geological Survey of India*, 12. Pappu, R.S., 1974, *Pleistocene Studies in the Upper Krishna Basin*, Pune. Sankalia, H.D., 1974, *Prehistory of India & Pakistan*, Poona, pp. 70, 143, 163.—R.V. JOSHI

Ghat Dungri, Dt Purulia. Microliths [4.5].

IAR 1959-60.

Ghatthera, Dt Saharanpur. OCW [4.12] site.]

IAR 1963-4.

Ghatigaon, Dt Gwalior. A rich Lower Palaeolithic [4.2] site along the Agra-Bombay national highway near Ghatigaon. The tools comprise handaxes, cleavers and scrapers, the last outnumbering the other two.

IAR 1972-3.

Ghatlohanga, Dt Bastar. Middle Palaeolithic [4.3] site.

Madhya Pradesh Sandesh, 13 June 1970, p. 10.

Ghatora, Dt Mirzapur. Middle Palaeolithic [4.3] site.

IAR 1970-1.

Ghat Semra, Dt Hamirpur (?). The bed of the Dhasan yielded tools of Series II (Middle Palaeolithic [4.3]).

IAR 1960-1.

Ghatsila, Dt Singhbhum. Microlithic tools and neoliths [4.6.4].

IAR 1959-60.

Ghattu, Dt Cuddapah. Neolithic pottery [11.1.5] mostly black and grey in colour.

Footo, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Ghazipur, Dt Bulandshahr. Early historical site.

IAR 1962-3.

Gheora, Dt Patiala. Harappa pottery [11.3] along the w. bank of the GHAGGAR. PGW [11.14] sherds and early historical pottery were also found.

IAR 1966-7, Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 123.

Ghodasgaon, Dt Jalgaon. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1965-6.

Ghogaal-pada, Dt Dhule. Series II (Middle Palaeolithic [4.3]) tools and microliths.

IAR 1959-60.

Ghespur, Dt Kurukshetra. PGW [11.14] site.

Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 126.

Ghirasgaon, Dt Dhule. Microliths were collected and Chalcolithic burial [4.14.6] site noticed.

IAR 1959-60.

Ghitora, Dt Sidhi. Tools of the Early and Middle Stone (Lower and Middle Palaeolithic [4.2.3]) Ages.

IAR 1962-3.

Ghod valley. The Ghod (18°22'; 73°14') originates about 75 km n.-w. of Pune at an elevation of about 1000 m above mean sea level on the e. slopes of the W. Ghats and flows over the Deccan plateau in e.-s.-e. direction for about 160 km before meeting the river Bhima, a n. tributary of the Krishna. The solid geology of the area is represented by the varieties of basalts and intrusive dolerite dykes of the Cretaceous-Eocene Age. The present climate of the area is predominantly semi-arid.

In 1959 Z.D. Ansari of the Deccan College discovered a fossil bone of *Elephas* sp. in a bouldery pebbly conglomerate exposed in the bed of the Ghod at Khadki (19°0'; 74°0') and a few Middle Palaeolithic [4.3] scrapers on chert in the modern bed at CHANDOLI (19°1'; 74°58'). These discoveries have been followed by intensive geo-archaeological and bio-archaeological researches in the valley since 1967, coinciding with the excavation of a Chalcolithic [4.14.6] site at INAMGAON on the same river. Middle and Upper Palaeolithic [4.4] tools made on cryptocrystalline silica have been discovered along with a large number of fossils of animals in the calcreted bouldery pebbly gravels exposed a few m above the modern bed of the Ghod at INAMGAON, SIRASGAON KANTA (18°37'; 74°28'), CHINCHNI (18°39'; 79°29') and ANNAPUR (18°50'; 74°18'), all in Dt Pune.

Quaternary [9.8] fluvial deposits are confined to the main valley and are not more than 30 m thick and 2 km in lateral extent on either bank of the stream. Two cut-and-fill terraces at 15 m and 8 to 10 m above the modern bed level are commonly observed on the banks of the Ghod. The lower and the younger (mid-Holocene [9.8.4]) terrace is inset into the higher and the older (Late Pleistocene [9.8.2]) terrace. At Nurgudsar (19°58'; 74°2'), a semicarbonized wood was found in a buried (13 m below the present bed level) channel deposit of about 39000 years B.P. Two ¹⁴C dates on molluscan shells found in the cemented gravel beds exposed 1 to 3 m above the modern bed level at INAMGAON suggest that the Ghod was flowing more or less in the present channel 20000 years B.P. Another ¹⁴C date of molluscan shells found in a channel gravel occurring 8 m above the modern bed at INAMGAON shows that the aggradation phase continued till about 11000 years B.P. The Late Pleistocene aggradation was ubiquitous in the entire length and breadth of the valley and was possibly in response to climatic changes not yet properly understood. The presence of animals like *Elephas maximus*, *Bos namadicus*, *Hexaprotodon palaeindicus*, *Cervus unicolor*, *Equus namadicus*, *Bubalus* sp. and *Canis* sp. during this aggradational phase certainly suggest the

existence of galleria forests on the banks of the Ghod. A few pollens of *Accacia*, *Eugenia* and *Holoptela* found in black clay bands near Inamgaon, calcretization of gravels and silts and the dominance of montmorillonite mineral in oxidized flood silts indicate hot semi-arid and seasonal climate during the late Pleistocene.

Late Pleistocene Stone Age industries are represented by varieties of scrapers (hollow, side, concave, convex, etc.), borers, points on cherts and chalcedony and by flake-blades, blades, etc., on chalcedony. Typologically these industries can be classed as Middle and Upper Palaeolithic [4.3, 4] traditions. At INAMGAON a stratified microlithic industry [4.5] of about 12000 years B.P. has been recently unearthed and it represents one of the earliest microlithic industries so far discovered in the Indian subcontinent.

Kajale, M.D., Badam, G.L., & Rajaguru, S.N., 1976, in *Geophytology*, 6, 1, pp. 122-32.—R.V. JOSHI

Ghodada, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3], tools and Chalcolithic [4.14.6] remains including microliths, black-painted red and burnished grey wares.

IAR 1962-3.

Ghogamba, Dt Panch Mahals. Mesolithic [4.5] site.

IAR 1970-1.

Ghogra, Dt Sagar. Lower and Middle Palaeolithic [4.2, 3] tools were found from cemented gravels of the Sonar river *in situ*.

IAR 1958-9. AI, 17, 1961, pp. 5-36.

Gholajuri, Dt Santal Parganas. Microliths [4.5].

IAR 1963-4.

Ghoralash, Dt Santal Parganas. Microliths [4.5].

IAR 1963-4.

Ghora Mangar, Dt Mirzapur. Rock-shelter with paintings [13]. Same as GHORMANGUR (?).

Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad, p. 55.

Ghoranagi, Dt Singhbhum. Lower Palaeolithic [4.2] and Upper Palaeolithic [4.4] site in the Suvarnarekha valley, also yielding Neolithic [4.6.5] celts and mace-heads.

IAR 1975-6.

Ghorapincha, Dt Midnapur. A cutting on a cliff at Ghorapincha close to the gorge at Hatunara revealed the following sequence: kaolinized deposit; secondary laterite containing Early Stone Age (Lower Palaeolithic [4.2]) tools; reddish and yellowish silts; and yellowish loamy earth.

IAR 1968-9.

Ghorhaloton, Dt Gorakhpur. Black-and-red Ware [11.6.3].

IAR 1963-4.

Ghori-Bachchera, Dt Bulandshahr. Early historical and medieval site.

IAR 1963-4.

Ghormangur, Dt Mirzapur. Painted rock-shelter [13] showing hunting of rhinoceros with harpoon. Same as

GHORA MANGAR (?)

Cockburn, J., 1883, in *Jour. Asiatic Soc. Bengal*, 52, 2.

Ghorwada (20°45'; 70°50'), Dt Rajkot. Late Harappa [4.10] site corresponding to RANGPUR II B and II C.

IAR 1958-9. AI, 18 & 19, 1962 & 1963, p. 205.

Ghosi (26°5'; 83°30'), Dt Azamgarh, situated 39 km n.e. of Azamgarh town, known for its huge mound Nahush-ka-tila situated in its neighbourhood, averaging in height about 12 to 16 m. A high mud rampart with openings, possibly gateways, on three sides except the e. encompasses the mound. Its importance became known by the find of many terracotta human figurines during 1935-6. Coins, beads and other antiquities were also found. It was again explored a few years ago and revealed on the surface a rich variety of ceramics, terracottas consisting of human and animal figurines, beads, marbles, skin-rubbers [18.4], toy-cart wheels, etc. This indicates that the settlement started in the early historical period [4.18.1] and was continuously inhabited till medieval times. The settlement began by about the 5th-4th century B.C. as revealed by the grey ware, the NBPW [11.16], red ware and Black-slipped [11.13] Ware. Black-and-red ware, both plain and painted [11.6.3] and red ware were in common use.

Some interesting terracotta human figurines belong to the Maurya and Kushan periods. The Mauryan type is represented by two figurines of which one is standing full figure and the other is preserved up to the neck. Both bear stamped decorative necklaces; one has in addition ear ornaments designed in the shape of flower. The Kushan specimens are found in typical 'realistic' modelling, one with a fan-shaped head-dress with deep vertical incisions and bulging eyes and the other a standing male figure with features akin to the *nāga* type found in other Ganga valley sites [17.1]. Wheel carts with highly ornamented discs are of the Kushan type. The site continued to be occupied during the medieval times as revealed by glazed ceramics.

Agrawala, V.S., 1937, in *Jour. U.P. Historical Soc.*, 10, 1. ASI—AR 1935-6, pp. 117-9; 1911, *Azamgarh Dt Gazetteer*, Allahabad. IAR 1971-2, p. 79. Negi, J.S., 1975, in *K.C. Chattopādhyāya Memorial Vol.*, Allahabad, pp. 51-6.—C. MARGABANDHU

Ghosrawan, Dt Nalanda (?). Remains of a temple were unearthed. On the basis of the discovery of a potful of small coins of Pāla kings and inscriptions the ruins can be dated to the 9th century.

ASI—AR, 1, pp. 38-9; 3, p. 120; 11, p. 171.

Ghosri, Dt Chandrapur. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1970-1.

Ghotama, Dt Palamau. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1971-2.

Ghotana, Dt Dhule. Microliths [4.5].

IAR 1961-2.

Ghotara, Dt Mirzapur. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1970-1.

Ghugamba, Dt Panch Mahals. Microlithic [4.5] site.

Sonawane, V.H., 1976, in *Arch. Congress & Seminar, 1972*, Kurukshetra.

Ghugatwind-Hinduan, Dt Amritsar. Black-slipped Ware [11.13] and black-and-red and grey wares.

IAR 1963-4.

Ghugharalu (Khijadiya), Dt Bhavnagar. Early historical site.

IAR 1971-2.

Ghughra, Ghughri, Dt Jabalpur. Microliths [4.5].

IAR 1959-60; 1963-4.

Ghugi-Jan, Dt Purulia. Microliths [4.5].

IAR 1959-60.

Ghuli, Dt Dhule. Microliths associated with ochre-coloured pottery. See DHAMDAI.

IAR 1957-8.

Ghumli, Hardo Dugar, Dt Jamnagar. Historical site.

IAR 1972-3.

Ghunada, Dt Rajkot. Late Stone Age (Mesolithic [4.5]) site.

IAR 1972-3.

Ghuram. See GHAGGAR VALLEY.

Ghutara, Dt Palamau. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1970-1.

Gida, Dt Jabalpur. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1964-5.

Gidagan, Dt Mysore. Cairn circles [4.17.8].

IAR 1962-3.

Giddalur (15°10'; 78°55') area, Dt Kurnool, first explored for its Stone Age remains by Cammiade, whose materials were examined by Burkitt. The examined areas were: the Bhavanasi gravels and Yerrakondapalem, the two being at either end of the Dornala-Atmakur pass of the Nallamalai; Gundala-Brahmesvaram at the top of the hill forming the source of the Gundlakamma river; and Giddalur, the town near Nandikanama pass, past which two rivers Sagileru and Enumaleru flow and meet, the exact locations studied of the last area not indicated. The study brought out a series of four salient lithic cultures of different ages ranging from the earliest handaxe industries of quartzite to the latest microlithic industry of agate and quartz. It was suggested that the stratigraphic and climatic data here supported a cycle of pluviation and interpluviation which might correspond to the Himalayan cycle of glaciation and interglaciation worked out by de Terra and Paterson [4.2], and also that the Kurnool tools had considerable similarities with their s. African counterparts.

In order to check up and add further data on these observations. F.E. Zeuner's team including V.D. Krishnaswami and the writer visited the sites examined earlier

and a few more. While Burkitt and Cammiade did not observe any element of Series III and IV around Giddalur, the collections of Zeuner's party included these elements also (Soundara Rajan, 1952). The study of the tool collections from the sites further showed that while only Series I and II of Burkitt and Cammiade were mainly found at Giddalur I, Series III and IV were found at Giddalur II (Narasimhakonda) where some elements of Series I and II also were present. The collections which were mostly from the surface at these sites also included two tools, one an Acheulian [4.2] handaxe on a section at Giddalur II and a parallelogrammatic cleaver, also Acheulian, from the implementiferous horizon of the Talapalle section. The stratigraphy at Giddalur revealed a cemented gravel deposit on the basal weathered rock above water-level, overlain by a silt layer and again superimposed by a loose pebbly deposit totalling to about 3½ m. This was repeated at nearly three different localities: (1) s. of SPG Mission Bungalow; (2) between 86th and 87th milestones of the Giddalur road; and (3) n. of the railway line and between the road and the river. The import of this might indicate two aggradational phases and the loamy sand or silt in between might suggest a comparatively dry condition. Typo-culturally all the four sites, Giddalur I and II, Talapalle and Kanchipalli, yielded proto-Levallois [16.17.1] tools. Giddalur I has the distinction of showing all the earlier facies from pebble tool to Clacton scrapers including rostracarinates, Victoria West and ovoids, while Giddalur II which does not have the last three elements compensates this lack by showing further development beyond proto-Levallois and Levallois in the form of bladish flakes and coarse burinate tools. The total number of tools examined was 240. The presence of rostracarinates, Victoria West and the most characteristic single and double Vaal technique cleavers definitely uphold the earlier observations of Burkitt that the tools bear comparison with s. African tools. But it should be added that this is indeed a parallelism in cultural taxonomy and would not indicate any direct ethno-cultural link between these two regions. It however does group the s. Indian tool series of the Early Stone Age with the s. African in a cultural consanguinity of tool traditions with climatic correlations. Series I and II tools are made on brownish fine-grained quartzite, while the other group of flakes, blade-flakes and scrapers is on greenish quartzite or shaly rocks or lydianite.

The microlithic industry from Giddalur II (Narasimhakonda) is made on greenish quartzite, vein-quartzite, banded or mottled jasper, lydianite, agate and chert. The tool types include parallel-sided and backed blades, lunates, scrapers, borers, points, burinate tools, etc. They have the general traits of epi-Palaeolithic microlithic industries.

Burkitt, M.C., & Cammiade, L.A., 1930, in *Antiquity*, 30, pp. 327-40. Burkitt, M.C., Cammiade, L.A., & Richards, F.J., 1932, in *Geological Magazine*, 59, p. 193. Krishnaswami, V.D., 1947, in *AI*, 8, p. 31. Soundara Rajan, K.V., 1952, in *ibid.*, pp. 64-92.—K.V. SOUNDARA RAJAN

Gidhada, Dt Dhule. Chalcolithic [4.14.6] habitation site.

IAR 1966-7.

Gidni, Dt Midnapur. A pebble tool [4.2] and a few microlithic flakes [4.5] were found in the loamy deposit overlying the upper gravel of the Dulung.

IAR 1961-2; 1967-8.

Gidranwali, (29°28'; 74°52'), Dt Hissar. Rang Mahal [11.24] site.

IAR 1967-8.

Giga Khera, Dt Bhilwara. Black-and-red ware and microliths [4.14.1]. See DURIA.

IAR 1957-8.

Gilgit (33°55'; 74°17'), where a mass of birch-bark and paper manuscripts were found in 1931 entombed in a circular chamber inside the dome of a *stupa*. The manuscripts, written in characters of 6th-7th century, are of immense importance, some of them known till then only in their Chinese and Tibetan translations. The chamber also contained clay *stupas* with tiny tablets bearing the Buddhist creed. There are two other adjacent *stupas* here.

Mitra, D., 1971, *Buddhist Monuments*, Calcutta, pp. 113-4.

Gilund, a small town located about a 1½ km off the right bank of the Banas in Dt Udaipur, the distance from the Dt headquarters Udaipur being about 70 km to the n.-e. as the crow flies. The unnamed ancient site in the vicinity of this town covers an area of about 460 × 230 m and is broadly divisible into two parts, w. and e., rising respectively to heights of about 7 and 14 m above the surrounding fields. A small-scale excavation carried out at the site during 1959-60 by the writer (*IAR* 1959-60, p. 41) revealed that while the occupation at both the mounds commenced simultaneously, that on the e. one continued much later, which fact also accounts for its extra height.

Two major Pds of occupation were identified, the earlier, Pd I, of which may be regarded as Chalcolithic [4.14.1] in character on account of the presence of a few microliths along with copper. Within this Pd four structural Sub-pds have been noted, in the earliest of which, at one place, a sizeable complex of mud brick walls (average size of brick 32.5 × 12.5 × 10 cm) is encountered. As far as exposed it covers an area of about 30 × 24 m, there being clear indications that it extended much beyond. The distinguishing feature of this complex is that it consists of about a series of four parallel n.-s. walls, joining at the s. end of an e.-w. wall. This latter wall has two parallel walls to its s., from the s.-most of which again emerge three parallel n.-s. walls.

The walls vary in thickness from 75 to 90 cm, while the intermediary space, measuring between 75 cm and 1.05 m, being filled in with sand. The extant height of the complex is about 2 m. There is little doubt that this was a very important structural complex of public utility, though in the absence of a large-scale excavation it has not been possible to determine its exact purpose. All through the Pd the residential houses are also made of mud brick, the walls being plastered with mud, in one case zigzag finger marks being observed on the plaster. Within the houses are noticed circular clay-lined ovens and even open-mouthed *chulhas*. Of further interest is the occurrence in these houses of circular or oblong pits, whose diameters or longer axes range from 90 cm to 1.3 m and average depth is about 60 cm, lined with a 1½ to 3 cm thick layer of white clay mixed with sand. In all probability the pits were used for some kind of storage, though no vestiges of the material stored therein have been found. Reed-impressed clay clods found during the excavation suggest that the house-roofs were flat, made of timber-and-reed plastered over with mud. That these Chalcolithic people were fully familiar with the use of kiln-burnt brick also is attested to by the presence in the s. part of the w. mound of a large wall, excavated up to a length of nearly 11 m, with several cross-walls. The burnt-brick walls have a reddish plaster, about 2.5 cm in thickness, consisting of sand and clay mixed with 15% of lime.

The characteristic ceramic industry of Pd I is a black-and-red Ware [11.6.2], painted over with linear and curvilinear designs in a creamish-white pigment. Also in use were plain and painted black, burnished grey and red wares. The upper levels of the Pd have a few specimens of black-on-cream and black-on-red wares. In addition to microliths and objects of copper, the other small finds comprise sling balls, saddle querns [6.19] and rubbers of stone, beads of a variety of semiprecious stones and gamesmen [6.7.2] and animal figurines of terracotta. Of the last-named item particularly noteworthy are the bull figurines with a prominent hump and long horns.

No ¹⁴C dates are available for Pd I. But a comparison of the Gilund pottery with that of NAVDATOLI shows that whereas the black-on-cream ware, with its typical designs of dancing figures and spotted animals, occurs in the upper levels of Pd I of Gilund, at NAVDATOLI it is confined to the lower levels only. Again, the painted black-and-red ware occurring throughout at Gilund is limited to the lower levels of NAVDATOLI. All this would indicate that Pd I of Gilund is in the main earlier than the occupation at NAVDATOLI, with an overlap towards the end of the former. Since on the basis of ¹⁴C dates the early levels of NAVDATOLI are assignable to a period around the middle of the 2nd millennium B.C., Pd I of Gilund may broadly be placed in the second quarter of

that millennium, with a probable margin on the earlier side.

Pd II of Gilund seems to have begun about the middle of the 1st millennium B.C., as indicated by the presence of bowls and dishes of grey ware. In the successive strata have been found Śunga and Kushan bowls in red ware, sprinklers in the Red Polished Ware [11.23], bowls in kaolin ware and knife-edged bowls in red ware, indicating that this occupation continued up to the end of the 1st millennium A.D. This dating on the basis of pottery is supported by the occurrence in the upper levels of a potsherd inscribed in characters of *circa* 9th century. Since the cultural equipment of this age is well known from other historical sites it is not being repeated here.

—B.B. LAL

Ginoli, Dt Mainpuri. PGW [11.14] site.

IAR 1960-1.

Giridangal, Dt Bankura. Microliths and flakes [4.5]. See BAKRESVAR AND KOPAI VALLEYS.

IAR 1961-2.

Girsikop, Dt Dharwar. Mesolithic [4.5] site with tools made on quartz and occasionally on chalcedony and crystal. The types are burin, crescent, awl, etc.

Information from B. Narasimhiah.

Glow, Dt Lohit. Stone Age (Palaeolithic) site on the high terraces between 914.4 and 1219.50 m yielding choppers, a protohandaxe, cleavers, scrapers, flakes and cores [4.2]. A few Neolithic implement including a shouldered celt [4.6.6] were also found.

IAR 1969-70. Bopardikar, B.P., 1972, in *Arch. Congress & Seminar*, Nagpur.

Gobarda, Dt Purulia. Microliths [4.5].

IAR 1959-60.

Gobarkallur, Dt Raichur. Site with stone artefacts, probably Chalcolithic [4.14.8].

AR Hyderabad Dept of Arch., 1935-6, p. 2. Foote, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 127.

Gobichettipalayam, Dt Coimbatore. Stone circles [4.17.9].

ASI—AR 1934-5.

Godageri, Dt Belgaum. Megalithic site with passage chambers [4.17.8].

Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 15-22.

Godamande, Dt Kolar. Megalithic stone circles [4.17.8].

IAR 1970-1.

Godavari valley. The Godavari originates on the e. slopes of the W. Ghats near Trimbakeshwar in Dt Nasik and runs across the Deccan in a s.-e. direction for a stretch of about 1465 km and meets the Bay of Bengal near Machilipatnam in Andhra Pradesh. The drainage basin area is 313389 sq km and some of the important tributaries like the PRAVARA, Kadva, Manjra, Wain-ganga, Wardha and Purna in Maharashtra have yielded rich Stone Age sites. The course of the Godavari in Andhra Pradesh remains to be explored systematically.

The upper Godavari valley is dominated by step-like erosional surfaces over varieties of basalts at 1000, 800, 650 and 500 m above mean sea level. The drainage pattern is dendritic and the streams flowing over plateaux are moderately meandering and confined to shallow box-shaped valleys. The Quaternary [9.8] alluvium rests unconformably over basaltic rocks of the Cretaceous-Eocene Age and occur in the form of two cut-and-fill types of terraces developed on the banks of the Godavari. The top surface of the older fill (Older alluvium) occurs 15 to 20 m above the modern bed level of the Godavari. The younger fill (Younger Alluvium) is inset into the older fill and occurs 5 to 10 m above the modern bed. The total depth of the Older Alluvium is about 40 m and extends a few km laterally on either banks. Occurrence of thick alluvial deposits right in the source region shows that the Godavari valley experienced a ubiquitous aggradation in response to mild climatic changes of the late Pleistocene [9.8.2]. The pre-aggradational history of the valley is represented by strong incision (15 to 20 m below the modern bed level) in hard rock basalts as a result of tectonic movements of the early Quaternary. Remnant patches of thin (2 to 3 m) bouldery cobbly gravels resting on bed-rock basalts at an elevation of about 15 to 20 m above the present channel around PAITHAN represent the earliest depositional phase of the Godavari. These high-level gravels of the early Quaternary age served as a rich source of raw material for the Middle Palaeolithic [4.3] man around Paithan.

The discovery of an agate flake at PAITHAN (19°28'; 75°23'), in 1863 and of an intact skull of *Elephas namadicus* at NANDUR MADHMESHWAR (20°00'; 74°05') in 1904, both in alluvial deposits, established the existence of Quaternary formations in the upper Godavari valley in Maharashtra. Later the discovery of handaxes and cleavers in a cut-off trench of the GANGAPUR DAM near Nasik by Sankalia in 1951 disproved the long-held belief that due to lack of suitable raw material (quartzite) and the presence of dense forests, the Deccan Trap region of the peninsula was not inhabited by early man during the Palaeolithic period [4.2-4]. Subsequent archaeological, geological and palaeontological investigations in the upper Godavari valley by Joshi, Corvinus, Rajaguru and Badam have established conclusively that the Godavari valley was occupied by man since the terminal mid-Pleistocene or early Upper Pleistocene.

The occurrence of animal fossils like *Elephas namadicus*, *Elephas maximus*, *Bubalus bubalis*, *Bos namadicus*, etc., in calcreted pebbly gravels along with Late Acheulian tools [4.2] at GANGAPUR (20°00'; 73°40'), and with Middle Palaeolithic tools at NANDUR MADHMESHWAR, KALEGAON (19°40'; 75°00'),

BELPANDHARI (19°35'; 74°50') and APEGAON (19°55'; 73°45') suggest a late Pleistocene age for the exposed Older Alluvial deposits in the Godavari valley. A few ¹⁴C dates on fresh-water molluscan shells collected from these gravels indicate that the aggradational phase of the Godavari valley range in age between 40000 to 15000 years B.P.

Culturally the Godavari basin is as rich as that of the c. NARMADA. A large number of archaeological sites ranging in age from the Stone Age to the historical periods have been discovered. The Chalcolithic [4.14.6] site of APEGAON has been dated to about 3500 years B.P. GANGAPUR represents an advanced Acheulian semi-primary channel-occupation site which is situated near a small waterfall on the Godavari near Nasik. The Lower Palaeolithic [4.2] tools found in the excavation of a gravel (1 to 2 m above the bed level) are represented by cleavers, flakes, scrapers, cores, etc., made on locally available basalt and dolerite. The tools are fresh but weathered. Important Middle Palaeolithic [4.3] sites are NANDUR MADHESHWAR, PAITHAN, RAKSHAS BHUVAN (19°22'; 75°37'), SHANKATIRTH (19°22'; 75°37'), GANGAKHED (18°59'; 76°45'), RAHEGAON (19°24'; 75°27'), and KIWALA (19°3'; 77°17'). The site of KIWALA is an open-air factory site near the source of Inter-trapezoid chert beds. The entire adjoining area is littered with the tools at all stages of manufacture. The tool kit comprises varieties of scrapers, points, borers and flakes made on locally available green chert and other multicoloured varieties of chalcedony. The workshop site of the Upper Palaeolithic industry [4.4] represented by blades, scrapers and burins occur near the source of grey chert at BHOKAR (19°14'; 77°40'). Within the Godavari basin tools consisting of varieties of scrapers, points, borers, retouched flakes, small choppers and a few blades and cores are found in the sandy pebbly gravels occurring as lenticular patches in the brownish silt at elevations 15 to 20 m above the modern bed. Such stratified sites at GANGAPUR and NANDUR MADHESHWAR are being studied for understanding the Terminal Pleistocene or Early Holocene [9.8.4] Stone Age culture of the upper Godavari.

Badam, G.L., 1973, in *Bull. Deccan College*, 33, pp. 21-40. Joshi, R.V., Mujumdar, G.G., Rajaguru, S.N., Pappu, R.S., & Badam, G.L., 1977, in *Recent Researches in Geology*, 4, pp. 382-87. Sankalia, H.D., 1974, *Prehistory & Protohistory of India & Pakistan*, Poona.—R.V. JOSHI

Godavarikhani, Dt Karimnagar. Lower [4.2], Middle [4.3] and Upper Palaeolithic [4.4] tools including hand-axes, cleavers, chopper-chopping tools, ovates and discoids were found on weathered surfaces.

Gururaja Rao, B.K., 1978, *Decade of Arch. Studies in s. India*, Dharwad, pp. 46-8.

Gode Bellore, Dt Mahbubnagar. Megalithic [4.17.7] site.

Sreenivasachar, P., 1963, in *Arch. Bull.* 11, Andhra Pradesh Govt Arch. Series, 5, Hyderabad, p. 2.

Godgeri, Dt Belgaum. Magalithic [4.17.8] site.

IAR 1966-7.

Godha, Dt Meerut. Grey ware associated with the NBPW [11.16] and red ware of Śunga-Kushan assemblage.

IAR 1962-3.

Godhapadar, (22°05'; 71°03'), Dt Rajkot. Late Harappa [4.10] site corresponding to RANGPUR II B and II C.

AI, 18 & 19, 1962 & 1963, p. 205.

Godhra, Dt Kutch. Rang Mahal culture [11.24] site.

AI, 18 & 19, 1962 & 1963, p. 187.

Godihai, Dt Dharwar. Early historical site. See ANVERI.

IAR 1959-60.

Godugumande, Dt Kolar. Megalithic [4.17.8] site with stone circles with or without rubble and with port-holed cists.

Information from C. Krishnamurthy through A. Sundara.

Gofkral, Dt Anantnag. Neolithic [4.6.1] similar to that at BURZAHOM. Menhirs [4.17.1] of the Burzahom type were found together with dwelling pits.

IAR 1962-3.

Goga Thala, Dt Udaipur. The site yielded black-and-red ware, microliths and black-on-red painted sherds with various designs, such as, horizontal bands, cross-hatched diamonds enclosed by horizontal bands and dots between vertical lines [4.14.1].

IAR 1957-8.

Godhawadar, Dt Rajkot. Red Polished Ware [11.23] site.

IAR 1957-8.

Gohana, Dt Gurgaon. PGW [11.14] site.

IAR 1954-5. Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 126.

Gohan-khera, Dt Aligarh. Early historical site.

IAR 1962-3.

Gokulpura, Dt Panch Mahals. See CHAMPANER.

Gokanakonda, Dt Krishna. Site with dolmens [4.17.7].

Sewell, R., 1882, in *Antiquarian Remains in the Presidency of Madras*, Madras.

Gokarna, Dt N. Kanara. At Gokarna which is identified with Parasuramatirtha some rock-shelters [13] were located on the hill-slopes near Ramatirtha, wherefrom a few sherds of a coarse grey ware similar in fabric to the Neolithic grey ware [11.15] of MASKI were collected.

IAR 1968-9.

Gokulpur, Dt Gurgaon. Pre-Harappa [4.8] site.

Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 126.

Goladal, Dt Purulia. Microliths [4.5].

IAR 1959-60.

Golakhurji, Dt Chandrapur. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAR 1961-2.

Golan. See PURNA VALLEY.

Goldha. See PURAN VALLEY.

Golganj, Dt Chhatrapur. Pointed-butt polished stone axes [4.6].

Brown, J.C., 1917, *Catalogue of Prehistoric Antiquities in the Indian Museum at Calcutta*, Simla.

Goli, Dt Guntur. Palaeolithic [4.2-5] site on the bank of the Golivagu yielding a few microliths. Dolmens [4.17.7] were also found.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras. IAR 1960-1.

Golio, Dt Jodhpur. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1959-60.

Gollagudem, Gudugudem, Dt Khammam. Early historical site.

Madras Arch. Report, August 25, 1902, p. 20.

Gollahalli, Dt Dharmapuri. Megalithic burial [4.17.9] site.

IAR 1969-70.

Gollapalayam, Dt Chingleput. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3]) tools.

IAR 1963-4.

Gollapalle, Dt Bellary. Port-holed cists [4.17.8].

Taylor, M., 1853, in *Jour. Royal Asiatic Soc. Bombay*, 4; 1873, in *Trans. Royal Irish Academy*, 24.

Gollapalli¹, Dt Dharmapuri. Neolithic celts, burnished grey ware [11.1] and Megalithic Black-and-red Ware [11.15.3].

IAR 1964-5.

Gollapalli², Dt Kurnool. The site on the Duvvali yielded Series I and II (Lower and Middle Palaeolithic [4.2, 3]) tools.

IAR 1959-60.

Gollathagudi, Dt Mahbubnagar. Excavation established the sequence of temple construction. Phase I of the temples is ascribable to c. 9th century and Phase II to 10th, while Phase III is much later, for besides the building material decorative elements and plan underwent changes.

IAR 1970-1; 1971-2; 1972-3.

Gomatpur, Dt Sagar. Palaeoliths (of unspecified nature) were found in the valley of the Billa, a tributary of the Dhasan.

IAR 1960-1; 1963-4.

Gonakanahalli, Dt Kolar. A large number of Megalithic cairn circles [4.17.8] were found. Apart from Megalithic Black-and-Red Ware, a few painted flakes of basalt and fragments of a ground stone axe [4.6.9] were also recovered.

IAR 1967-8.

Gonal¹, Dt Bijapur. Microliths [4.5].

IAR 1961-2.

Gonal², Dt Raichur. Chalcolithic [4.14.8] site.

IAR 1970-1. *Karnataka Bharati*, 6, 1, pp. 64-75.

Gonchi, Dt Guna. A large number of tools of Series II (Middle Palaeolithic [4.3]) were found in the Betwa river bed.

IAR 1959-60.

Gondas, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) tools and microliths. Chalcolithic [4.14.6] burial remains were also found.

IAR 1961-2.

Gondi, Dt Jaipur. The mound yielded PGW [11.14], NBPW [11.16], black-and-red ware and Red Polished Ware [11.23].

IAR 1958-9.

Gondimalla, Dt Mahbubnagar. Megalithic stone circles [4.17.7].

IAR 1965-6.

Gone-Umargarh, Dt Etah. PGW [11.14] and NBPW [11.16].

IAR 1960-1.

Goni Timbo, Dt Surendranagar. Harappa [4.9] site situated within a distance of 8 km from RANGPUR.

IAR 1954-5.

Gonupalli. See BOGGERU VALLEY.

Gop (22°01'; 69°56'), Dt Jamnagar. The site on the right bank of the river Vartu yielded ceramic types of the late Harappa [4.10] and Transitional Phases of RANGPUR sequence. In the early historical period the habitation shifted from the right bank to the left where Red Polished Ware [11.23] and Gupta coins have been found. A well-known Gupta temple also stands here.

IAR 1953-4. *AI*, 18 & 19, 1962 & 1963, p. 205.

Gopagiri, Dt Midnapur. Microliths [4.5].

IAR 1963-4.

Gopaipalli, Dt Karimnagar. Mesolithic [4.5] site.

Gururaja Rao, B.K., ed., 1978, *Decade of Arch. Studies in s. India*, Dharwad, p. 49.

Gopalapuram, Dt Madurai. Cairn circles [4.17.9].

IAR 1958-9.

Gopalamiparambu, Dt Madurai. Urn burials [4.17.9].

IAR 1958-9.

Gopalnagar, Dt Birbhum. Black-and-red Ware [11.6.5] site.

IAR 1967-8.

Gopalpur¹, Dt Burdwan. Microlithic [4.5] site near Durgapur.

AI, 14, 1958, p. 34. IAR 1960-1; 1971-2.

Gopalpur², Dt Gorakhpur. Black-and-red Ware [11.6.3] site.

IAR 1963-4.

Gopalpur³, Dt Midnapur. Early Stone Age (Lower Palaeolithic [4.2]) tools mainly choppers, handaxes and scrapers.

IAR 1963-4.

Gopalpur⁴, Dt Singhbhum. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3]) tools and microliths [4.5].

IAR 1962-3.

Gopalpura, Dt Amritsar. Black-slipped Ware [11.13] and plain red and Sunga-Kushan red wares.

IAR 1964-5.

- Gopinatham**, Dt Mysore. Megalithic cist burials [4.17.8].
IAR 1961-2.
- Gora**, Dt Ranchi. Site yielding a stone ceremonial stool and an elongated broad-bladed axe of siliceous rock.
Roy, S.C., 1916, in *Jour. Bihar & Orissa Res. Soc.*, 2, p. 71; 1918, 4, p. 412.
- Gorabari**, Dt Bankura. Microliths and a channel-spouted bowl.
IAR 1959-60; 1967-8.
- Gorakh Nath temple**, Dt Ambala. Terrace 2 of the river SIRSA around Gorakh Nath temple on the Pinjore-Nalagarh road yielded a large number of flakes and cores of Sohan, Clactonian, Proto-Levallois and Levallois techniques [16.15.1].
IAR 1971-2.
- Gorarpara**, Dt Birbhum. Site yielding channel-spouted bowls.
IAR 1967-8.
- Goravanhalli**, Dt Kolar. Megalithic stone circles [4.17.8].
IAR 1970-1.
- Goravgundagi**, Dt Bijapur. Early historical site.
IAR 1959-60.
- Gorchincholli**, Dt Bidar. Neolithic [4.6.9] site.
Karnataka Bharati, 11, 3.
- Goregaon**, Dt Ahmadnagar. Sherds of thick grey ware.
IAR 1960-1.
- Gorha Kota**, Dt Sagar. Palaeolithic (of unspecified nature) site.
IAR 1958-9.
- Goriya¹**, Dt Jhalawar. Fluted cores and blades of chalcedony and scrapers of jasper [4.3].
IAR 1958-9.
- Goriya²**, Dt Rajkot. Early historical [4.18.2] site near Bhimora.
IAR 1958-9.
- Gorkal, Gorkul**, Dt Raichur. Ash-mound [14.3], Neolithic [4.6.9], Chalcolithic [4.14.8] habitation and Megalithic [4.17.8] burial site.
IAR 1965-6. Sundara, A., 1971, in *Prof. Nilakanta Sastri Felicitation Vol.*, Madras; 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 78-9.
- Gorwasa**, Dt Dhule. Lower Palaeolithic [4.2] tools.
IAR 1958-9.
- Goswamikhanda**, Dt Burdwan. Excavation laid bare a massive structure of laterite blocks showing different phases of repairs. The last structural phase yielded fragments of Brahmanical images assignable to about the 10 century. Earlier microliths and flakes had been found at the site.
IAR 1961-2; 1963-4.
- Gotipa**, Dt Udaipur. Microlithic [4.5] site in the Berach valley.
IAR 1962-3.
- Gotkhindki**, Dt Bijapur. Chalcolithic [4.14.8] site. See ALMEL.
IAR 1959-60.
- Gottapalle**, Dt Cuddapah. Early, Middle and Late Stone Age (Early and Middle Palaeolithic [4.2, 3] and Mesolithic [4.5]) tools.
IAR 1964-5.
- Goudarahundi, Goudrahalli**, Dt Mysore. Megalithic habitation [4.17.8] site also yielding the Russet-coated Painted Ware [11.22].
IAR 1960-1; 1963-4.
- Govara**, Dt Satara. Middle and Late Stone Age (Middle Palaeolithic [4.3] and Mesolithic [4.5]) tools.
IAR 1962-3.
- Govindada**, Dt Ahmadabad. Mesolithic [4.5] site.
IAR 1971-2.
- Govindapur**, Dt Birbhum. Microliths [4.5].
IAR 1964-5.
- Govindgarh**, Dt Ajmer. Site on the river Sagarmati with Series I and II (Lower and Middle Palaeolithic [4.2, 3]) tools.
IAR 1958-9.
- Govindgarh Tank**, Dt Rewa. Microlithic [4.5] site.
IAR 1957-8.
- Govindpura**, Dt Sehore. Early Stone Age (Lower Palaeolithic [4.2]) tools.
IAR 1963-4.
- Gowardhan**, Dt Nasik. Lower Palaeolithic [4.2] site.
Sankalia, H.D., 1952, *Godavari Palaeolithic Industry*, Poona.
- Gobewad**, Dt Bijapur. Thick coarse grey ware with ribbon flakes of chert [4.14.8].
IAR 1958-9.
- Gubra-Kalan**, Dt Jabalpur. Microliths [4.5].
IAR 1959-60.
- Gudali Hill**, Dt Nellore. Lower [4.2] and Middle Palaeolithic [4.3] site.
IAR 1968-9.
- Gudalur**, Dt Coimbatore. Cairn circles [4.17.9].
IAR 1957-8.
- Gudana**, Dt Ambala. PGW [11.14] site.
IAR 1964-5. Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra.
- Guddi**, Dt Raichur. Megalithic [4.17.8] site; port-holed chambers.
Karnataka Bharati, 6, 1, pp. 64-75.
- Gudgur**, Dt Dharwar. Early historical site. See HAN-DIGNUR.
IAR 1958-9.
- Gudiam**, Dt Dharmapuri. Megalithic tombs [4.17.9].
IAR 1965-6.
- Gudibanda**, Dt Kolar. Megalithic [4.17.8] site with a number of stone circles.
Indian Antiquary, 11, 1882, pp. 86-8. Seshadri, M., 1960, *Report on the Jadigenahalli Megalithic Excavations*, Bangalore, p. 1.
- Gudikallu**, Dt Kurnool. Ash-mound [14.3].
Allchin, F.R., 1963, *Neolithic Cattle-keepers of s. India*, Cambridge, p. 51.
- Gudikyatara**, Dt Belgaum. Megalithic [4.17.8] site.
IAR 1966-7.
- Gudimallam**, Dt Chittoor. Middle Palaeolithic [4.3],

Upper Palaeolithic [4.4] and early historical site yielding black-and-red ware and Russet-coated Painted Ware [11.22].

Sarma, I. K., 1974, in *Bharati Telugu*, 51, 8, pp. 7-11.

Gudimellanka, Dt E. Godavari. Megalithic Black-and-red Ware [11.15.3].

IAR 1962-3.

Gudisagar, Dt Dharwar. Lower Palaeolithic [4.2] site also yielding Neolithic [4.6.9] implements.

IAR 1967-8.

Gudivada, Dt Krishna. A large number of Sātavāhana coins [3.1], beads of all kinds in metal, stone and glass and other objects including heaps of pottery.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Gudiyam (13°16'; 79°49'), Dt Chingleput, situated at the n. tip region of the Alicoor hills is the key and type site clearly elaborating the phenomenon described below.

The Upper Gondwana rocks in the e. coast are a relic of the great marine transgressions. A few small inliers of these rocks occur among the younger Tertiary and post-Tertiary [9.8] formations. One such transgression is marked by the formation of the Sriperumbudur shale overlain by the Satyavedu sandstone, both of the Upper Gondwana age, and underlain by Archaic gneisses. The Satyavedu sandstone is mainly a deposit of boulder-conglomerate, the binding matter being a ferruginous compound liable to lose its holding capacity under water action. This resulted first in the loosening of the boulders forming talus cones and then a dispersal into boulder slopes by soil creep, the latter being easy because of the clayey composition of the underlying shale. This further resulted in the remnant of the Satyavedu sandstone deposits in the form of some ridge-like hills with its general axis in the n.-e. to s.-w. direction. The ferruginous solution mixed with the clayey mass has passed several times over the different regions of the slope over the thick boulder deposit. This slope culminates at the first peneplain, now confirmed as a marine terrace, where the top clayey mass of the shale has been so impregnated with ferruginous solution that it has assumed the form of and has even been described as a laterite [9.6]. Over this there is the first spread of loose boulders which contain Middle Acheulian tools [4.2]. The boulder deposit, often approximating 15 m in thickness constituting the slope, contains throughout tools from the Middle Acheulian to Middle Palaeolithic [4.3], the ones farthest from the talus cone being the earliest and so on thereby maintaining a horizontal stratigraphy.

—K. D. BANERJEE

Gudiyam-3. See SRIKRISHNAPURAM.

Gudluru, Dt Prakasam. Lower [4.2] and Middle Palaeolithic [4.3] tools comprising Abbevillian and Acheulian handaxes, scrapers, flakes, etc.

Aiyappan, A., 1942, *Manley Collection of Stone Age Tools*, Mem. ASI, 68, p. 9.

Gudnapur, Dt N. Kanara. Early historical site.

Karnataka Bharati, 4, 1, pp. 90-5.

Gudrana, Dt Gurgaon. PGW [11.14] and early historical site.

Punia, D. S., 1976, unpublished thesis, Kurukshetra Univ.

Gudulupet, Dt Mysore. Russet-coated Painted Ware [11.22].

IAR 1962-3.

Gudur¹, Dt Nellore. Lower Palaeolithic [4.2] site.

Aiyappan, A., 1942, *Manley Collection of Stone Age Tools*, Mem. ASI, 68, p. 7.

Gudur², Dt Raichur. Megalithic [4.17.8] site with disturbed burials.

Karnataka Bharati, 6, 1, pp. 64-75.

Guduvancheri, Dt Chingleput. Megalithic site with cairns [4.17.9].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Gugalamari, Dt Bijapur. Neolithic [4.6.9], Chalcolithic [4.14.8] and Megalithic burial [4.17.8] site.

IAR 1965-6. Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 88-9.

Gugihal, Dt Bijapur. Neoliths [4.6.9] and painted black-on-red Chalcolithic pottery [4.14.8]. See DULAKHEDA.

IAR 1957-8.

Guindy, Dt Chingleput. Megalithic [4.17.9] site.

AI, 22, 1966, p. 28.

Gujar. See SHERPUR³.

Gujarpur¹, Dt Bulandshahr. Early historical and medieval site.

IAR 1963-4.

Gujarpur², Dt Dhule. Microliths [4.5].

IAR 1959-60.

Gujralikheda See NAKLOI.

Gujulbanda, Dt Jalgaon (?). Russet-coated Painted Ware [11.22].

AI, 4, 1947-8, p. 310.

Gulapalyam, Dt Anantapur. Neolithic habitation [4.6.8] site. Megalithic [11.15.3] and early historical pottery also found. See AKKAMMAKONDA.

IAR 1965-6.

Gulbal, Dt Gulbarga. Early Stone Age (Lower Palaeolithic [4.2]) site at Gulbal (Locality 2) on a feeder stream of the Hunsgi. The tool-types included handaxes, cleavers, unifacial and bifacial pebble tools, cores, flakes of plain and prepared cores, etc. That this assemblage is of the Acheulian facies is revealed by the refined character of the manufacturing techniques. See DON RIVER.

IAR 1968-9.

Guledgudda, Dt Bijapur. Megalithic [4.17.8] site with dolmens and round barrows.

Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, p. 35.

Guler (32°1'; 76°9'), Dt Kangra. See BEAS-BANGANGA VALLEY.

Gulicholabetta, Dt Nilgiri. Megalithic [4.17.9] site.

Footo, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 72.

Gulistanpur, Dt Bulandshahr. The w. part of the extensive mound yielded Harappa pottery [11.3], while the e. part showed only the occurrence of the PGW [11.14] and plain grey ware.

IAR 1963-4.

Gulugudem. See GOLLAGUDEM.

Gulya, Dt Mysore. Megalithic cist burials [4.17.8].

IAR 1961-2.

Gumad, Dt Rohtak. PGW [11.14] and NBPW [11.16] site.

IAR 1960-1.

Gumar, Dt Rohtak. Early historical site.

Jour. Haryana Studies, 3, 1, p. 6.

Gumatapuram, Dt Dharmapuri. A Megalithic [4.17.9] site with a number of dolmens, ancient sepulchral remains, pottery, iron implements, etc.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras, p. 194.

Gumballi, Dt Mysore. Microliths [4.5].

IAR 1960-1.

Gummanur, Dt Dharmapuri. Megalithic [4.17.9] site with port-holed cists.

IAR 1967-8.

Gunanupuram, Dt Srikakulam. Mound going back to the early centuries A.D.

IAR 1955-6.

Gundagatti, Dt Dharwar. Early historical site.

Progress of Kannada Res. in Bombay State, 1947-52, 1953, p. 42.

Gundai-ni-dhar, Dt Rajkot. Early historical [4.18.2] site near Khokhari.

IAR 1958-9.

Gundaknal, Dt Bijapur. Chalcolithic [4.14.8] habitation site.

IAR 1960-1.

Gundalamaduru, Dt Dharmapuri. Megalithic cairn circles [4.17.9].

IAR 1970-1.

Gundavolu. See BOGGERU VALLEY.

Gundam. See SRISAILAM.

Gundia, Dt Bharuch. Middle and Late Stone Age (Middle Palaeolithic [4.3] and Mesolithic [4.5] site).

IAR 1969-70.

Gundigi, Dt Bijapur. Chalcolithic [4.14.8] site. See ALMEL.

IAR 1959-60.

Gundimala, Dt Mysore. Megalithic cist burials [4.14.8].

IAR 1961-2.

Gunduvatam, Dt Dharmapuri. Megalithic [4.17.9] site with port-holed cists and cairn-packed cists and stone circles.

IAR 1967-8.

Gungeria, Dt Balaghat. Copper Board [4.11] site.

Brown, J.C., 1917, *Catalogue of Prehistoric Antiquities in the Indian Museum at Calcutta*, Simla, pp. 146-51. *Indian Antiquary*, 34, 1905, pp.

229-44. *Proc. Asiatic Soc. Bengal*, 1870, p. 131. Lal, B.B., 1951, in *AI*, 7, p. 38A.

Gunj, Dt Agra. PGW [11.14], thick grey pottery and Black-slipped Ware [11.13].

IAR 1971-2.

Gunni, Dt Hassan. Megalithic [4.17.8] site.

Seshadri, M., 1956, *Stone-using Cultures of Pre- & Proto-historic Mysore*, London, p. 61.

Gunore, Dt Ahmadnagar. Tools of Series (Middle Palaeolithic [4.3]), microliths and sherds of thick grey ware.

IAR 1960-1.

Guntakal, Dt Anantapur. Pointed-butt polished stone axes [4.6.8], celts, corn-crushers, hammers and cores.

Footo, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Gunthri-Gadh, Dt Kutch. Early historical [4.18.2] site.

IAR 1969-70.

Guntupalli, Dt W. Godavari. Early historical site.

IAR 1961-2; 1968-9.

Gupansar, Dt Bastar. Mesolithic [4.5] site on the Narangi river.

IAR 1960-1.

Gupteshwar, Dt Gwalior, situated on the way to Tigra dam (between 23°0' and 26°49'; 76°6' and 79°38') in Gwalior town, the region broadly falling into three natural divisions consisting of the plain or low-lying area, the plateau and the hilly tract. The hills Amra Pahar and Odhpur flank the long valley up to the site of the dam. The main rivers flowing in the vicinity are the Sank, Sonarekha, flowing about 7 km n.-e. of Gupteshwar and a few others now non-existent. The present vegetation consists largely of deciduous trees and shrubs. A little beyond Gupteshwar in the s. is a thick forest at Panihar, having *ber* (*Zizyphus jujuba*), *ramjha* (*Accacia leucophlaea*), *palās* (*Butea frondosa*), etc. The present fauna consists of the black-buck, spotted deer, *nilgai*, panther, tiger, *sambhar*, jackal and monkey, besides a variety of birds and fish.

The site was discovered by B.B. Lal and his wife and later on explored by Lal with the assistance of the writer and others. The excavation of an open-air site on the sloping hills on the s. was undertaken in 1974 by Lal assisted by the writer and research scholars of the Jiyajirao Univ. of Gwalior. Trenches were laid on Level 1, the topmost flat plateau of the Amra Pahar having a height ranging from 307.10 to 318.50 m above mean sea-level, Level 2, appearing like a ledge 45.72 m lower than Level 1, and Level 3, again about 30.48 m below Level 2. From levels 2 to 3 a long vertical trench measuring 160 m was laid.

The total thickness of the deposit at level 1 ranges from 28 to 33 cm. The stratigraphy shows the sandstone bed-rock followed by a thin layer of pelley laterite, which is overlain by a round pebbly gravel bearing Lower Palaeolithic [4.2] tools. This gravel is capped by a

thin layer of red sandy clay and finally on top of it is humus. At Level 2, 1-2 m thick, the stratigraphy is more or less the same, excepting that the tool-bearing gravel here is 50 cm thick with small and large flakes of sandstone; the tools are larger in number and bear definite Abbevillian and Acheulian characteristics.

At Level 3 on the decomposed gneissic bed-rock, having obscure foliation and clear patches of feldspars, rests the calcareous gravel, which is the horizon of the Middle Palaeolithic [4.3] industry. This is followed by a thin layer of black sticky clay, which is finally covered up by humus.

The Lower Palaeolithic industry is composed of about 1000 tools. Besides cores, handaxes, cleavers, scrapers of various types, long blades, etc., there are several waste flakes suggestive of a factory site. The tools from Level 1 are highly patinated and pulverized. While scrapers are of all types, handaxes and cleavers are missing. The tools are smaller in size, one scraper with straight edge with a convex showing cortex on both surfaces and the butt is similar to a find from the PRAVARA (Sankalia, 1962, p. 104). The tools from Level 2 are less weathered. Two handaxes made on elongated pebbly cores with deep flake scars and irregular zigzag outline can be regarded as Abbevillian. The ratio between handaxe and scraper is 1:10. Another significant tool is a long sandstone blade going in close association with the Lower Palaeolithic industry and reported earlier from the Late Sohan assemblage (de Terra and Paterson, 1939, p. 310) and from the Chauntra industry (*ibid.*, pl. XLIII, 4).

The tools of the Middle Palaeolithic industry are mainly found in the white calcareous gravel. The nature of the gravel suggests that during the Upper Pleistocene period [9.8.2] there was a river flowing here from n. to e. which had adopted a sluggish course at some stage causing the gravel to spread on the bed. The tools are made mainly on jasper, but chert has also been used frequently. Typologically they are simple and plain flakes, with scrapers, points, borers and borer-cum-scrapers. The blade element is also present with a prominent bulb of percussion and at times diffused flake scars.

In the periphery of Level 2 there are huge sandstone rock-shelters, at least two of them having paintings in ochre [13]. Excavation in two of them yielded two phases of occupation. The top habitation layer was covered up with broken scree of the rock which appears to have broken causing the accidental death of an inhabitant, probably a child, whose skeleton was found crushed under it.

Microoliths [4.5], both geometric and non-geometric, have been found in both the levels which are divided by a thick layer of sterile broken rock. The bones of animals

and birds occur in abundance along with microoliths made on chert, chalcedony, etc. The paintings in ochre show hunting scenes—particularly a person attacking a bison-like animal and a group of seven monkeys seated in a row.

de Terra, H., & Paterson, T.T., 1939, *Studies on the Ice Age in India & Associated Human Cultures*, Washington. Lal, B.B., & Nautiyal, K.P., 1974, 'Lower & Middle Palaeolithic Industries in Gwalior', paper presented by the latter at the Seminar on Indian Prehistory, Deccan College, Poona. Sankalia, H.D., 1962, *Prehistory & Proto-history in India & Pakistan*, Bombay.—K.P. NAUTIYAL

Gurahoma-Sangri, Dt Srinagar. Polished stone axe and a harvester of the Neolithic period [4.6.1].

IAR 1961-2.

Guram, Dt Ranchi. Microoliths [4.5].

IAR 1960-1.

Gurar-Dahar. See SAGAR.

Gurdipur. See JAFARPUR.

Gurgaon, Dt Gurgaon. PGW [11.14] site.

Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 126.

Guriadi, Dt Singhbhum. Dolmenoid structures and menhirs [4.17.4].

IAR 1961-2.

Gurjala, Dt Bellary. Russet-coated Painted Ware [11.22].

AI, 4, 1947-8, p. 308.

Gurjapur, Dt Raichur. Megalithic [4.17.8] site with cairns and stone circles.

Jour. Geological Surv. Hyderabad, 3, 1, pp. 76-82.

Gurjihal, Dt Mahbubnagar. Middle Palaeolithic [4.3] site.

IAR 1968-9.

Gurmitkal, Dt Gulbarga. Megalithic [4.17.8] site.

Megalithic Tombs & other Remains in the Deccan, Hyderabad, 1941.

Gurzala, Dt Bellary. Neolithic [4.6.9] site.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, pp. 77-8.

Gusai ala. See KARONTHA.

Gusar, Dt Panch Mahals. Early historical settlement yielding Red Polished Ware [11.23], brick structures, beads, bangles, terracotta objects and black-and-red ware [1.15].

IAR 1972-3. Sonawane, V.H., 1976, in *Arch. Congress & Seminar*, 1972, Kurukshetra.

Gutichalahill, Dt Raichur. Megalithic [4.17.8] site with cairns and stone circles.

AR. Hyderabad Dept of Arch., 1933-4, p. 7.

Guttur, Dt Kolar. Megalithic stone circles [4.17.8].

IAR 1970-1.

Guttapalle, Dt Krishna. Sites with dolmens [4.17.7].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Guttikonda, Dt Guntur. Series II (Middle Palaeolithic [4.3] tools.

IAR 1961-2.

Guttur, Dt Kolar. Megalithic [4.17.8] site with stone

circles with or without rubble filling and with cists.

Information from C. Krishnamurthy through A. Sundara.

Gwalior hill, Dt Gwalior. A painted rock-shelter [13].

IAR 1956-7.

Gwarighat, Dt Jabalpur. Tools of Series II (Middle Palaeolithic [4.3]).

IAR 1958-9.

Gyaraspur, Dt Vindisha. A few Palaeolithic (of unspecified nature) tools were found in a nullah joining the river Keotan near Gyaraspur.

IAR 1959-60; 1963-4.

H

Habipura, Dt Ganganagar. A microlith, three chert blades seemingly Harappa [4.9], grey ware, Rang Mahal pottery [11.24] and two terracotta figures.

Unpublished.

Hacchholi, Dt Bellary. Early historical site.

IAR 1962-3.

Hadagali, Dt Belgaum. Lower Palaeolithic [4.2] site.

Joshi, R.V., 1955, *Pleistocene Studies in the Malaprabha Basin*, Poona, pp. 23-5.

Hadakhed, Dt Dhule. Late Stone Age (Mesolithic [4.5]) site.

IAR 1969-70.

Hadargergeri, Dt Dharwar. Chalcolithic [4.14.8] site yielding the thick and coarse grey ware of BRAHMAGIRI, a few black-painted red sherds and 15 polished stone axes.

IAR 1959-60; 1962-3.

Hadi, Haddi, Dt Ratnagiri. Early Stone Age (Lower Palaeolithic [4.2]) factory site with some caves.

IAR 1970-1. Gunder, S.J., 1977, in *Man & Environment*, 1, p. 5.

Hadipur, Dt 24-Parganas. NBPW [11.16] site.

IAR 1961-2.

Hagaratgi, Dt Gulbarga. Megalithic [4.17.8] site.

Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 52-4.

Hagargundgi, Dt Gulbarga. Stratified site of the Middle Stone Age (Middle Palaeolithic [4.3]) industry on the left bank of the Bhima river. The tools comprised scrapers, points, boras, flake blades and blades.

Jour. Geological Survey of Hyderabad, 5, 1, p. 56. IAR 1967-8.

Hagri Pada, Dt Dhule. Microliths and sometimes neoliths were found in association with black-on-red painted ware.

IAR 1957-8.

Haigund, Dt N. Kanara. Early historical site.

Karnataka Bharati, 8, 2, p. 14.

Hainchula, Dt Bhagalpur. Microliths [4.5].

IAR 1963-4.

Hajanala, Dt Rajkot. Harappa [11.3] pottery.

IAR 1959-60.

Halagur, Dt Mandya. Megalithic [4.17.8] site with cists and stone ancles.

Seshadri M., 1959, *Stone-using Cultures of Pre- & Proto-historic Mysore*, London, p. 59.

Halakundi, Dt Bellary. Neolithic [4.6.9] site.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, pp. 77-8. IAR 1959-60.

Halalpur, Dt Rohtak. PGW [11.14] and Black-slipped Ware [11.13] site.

Jour. Haryana Studies, 3, 1, p. 6.

Halanmardi, Dt Gulbarga. Megalithic [4.14.8] site with a stone alignment.

Jour. Geological Survey of Hyderabad 4, 1, p. 157.

Halasabalu, Dt Chitradurga. Early historical site.

Manavika Bharati, 2, 1 January 1978.

Halbhavi, Dt Gulbarga. Megalithic [4.17.8] site.

Jour. Geological Survey of Hyderabad, 4, 1, p. 157.

Hal-Buduki, Dt Dhule. Mesolithic [4.5] site.

IAR 1960-1.

Halebid, Dt Hassan. Megalithic [4.17.8] site near the famous Hoysala temples.

Seshadri, M., 1956, *Stone-using Cultures of Pre- & Proto-historic Mysore*, London, p. 61.

Halekote, Halekota, Hill, Dt Bellary. Neolithic [4.6.9] site.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, pp. 77-8. Paddayya, K., 1973, *Investigations into the Neolithic Culture of Shorapur Doab, s. India*, Leiden, fig. 29.

Halenda, Dt Rajkot. Harappa pottery [11.3].

IAR 1957-8.

Halepalya, Dt Kolar. Megalithic [4.17.8] site.

IAR 1972-3.

Halgap, Dt Dharwar. Neolithic [4.6.9] site.

IAR 1968-9.

Halingali, Dt Bijapur in Taluka Jamkhandi (16°30'; 75°20'), about 5 km e. of TERDAL at the foot of the e.-w. oriented sandstone hill plateaux. Close to the w. of the village is a late medieval stone fort in ruins. S and e. of the villages on the hilly terraces there are more than 400 megaliths [4.17.9] in continuation of those on the same hillock within the limits of TERDAL and HANGANDI. In fact megaliths exist continuously even beyond the limits of Halingali in the areas of two other adjacent villages MADALMATTI and ASANGI. The megaliths are chiefly of four types: passage chambers of Greek or Latin cross type; circular passage chambers; small square chambers; and cairn stone circles. As at TERDAL there are pillars within the passage chamber of both the types to support multiple capstones. In case the chamber is high the cairn packing on the outside supporting the chamber is held by a dry coursed rubble wall rectangular on plan. Otherwise the rubble packing is held by concentric circles or a circle and a rectangle. The largest chamber on an average measures about 5.50 by 6.50 m and the coursed wall enclosing the cairn packing 12 m. Occasion-

ally on the s. exterior of the retaining wall there may be a semicircular enclosure with an opening at the centre in alignment with the passage of the chamber almost invariably oriented s.wards or somewhere between the s.-w. and s.-e. The cairn stone circles are self-explanatory. The square chamber is generally small in size enclosed by a circles but with very weak cairn packing in between. Occasionally on the exterior of the enclosing circles there may be two or three smaller chambers enclosed by semicircles abutting the main circles. Megaliths of these two types are about a dozen each that appear to represent the fag end of the burial practice at the site. Besides there are two or three low round barrows.

A round barrow, two cairn stone circles and one of the largest passage chamber of Latin cross type were excavated by the writer. The round barrow consisted of heavily packed cairn overlying an oval-shaped pit. But excepting three of four potsherds of burnished grey ware of the Chalcolithic culture [4.14.8] from the pit and a crushed vase of bright-red ware of the Megalithic culture at a spot in the cairn packing no other burial was found.

The three megaliths were found to have been previously disturbed. The cairn circles did not yield anything noteworthy but a few potsherds of Megalithic fabric [11.15.3]. The passage chamber though already ransacked did yield pottery of different types and iron objects. The pottery is of three fabrics: the Black-and-red Ware, bright burnished red ware and coarse red ware. The vase, basin, bowl, dish and lid are the main types in the Black-and-red Ware; and the vase with collared or externally beaded and truncated or out-curved having undercut rim, basin, hemispherical deep bowl, lid with flanged waist and dish-on-stand are represented in the red ware. The iron objects are fragments of saucers, straps, hooks, a curved blade (?) and a clip. Besides a thin copperplate with two notches on one side also was obtained.

¹⁴C dating of the charcoal bits from the debris is 2080 ± 100 (c. 130 B.C.) which probably indicates the existence of the passage chamber at that time rather than the period of its construction in view of the previous disturbance to it. The passage chamber tombs of these types are reasonably placed between 1200 and 700 B.C.

Sundara A., 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 26-30.—A. SUNDARA

Halki, (16°14'; 75°15'). See GHATAPRABHA VALLEY.

Hallur, (14°20'; 75°37'), Dt Dharwar, on the left bank of the Tungabhadra, anciently known as Hallavaru, Vijayasamudra or Vijayapura, mentioned in late historical inscriptions as the capital of the Śindas, excavated by M.S. Nagaraja Rao in 1965. The total deposit of 6-40 m can be divided into two Pds, Pd I with two phases. The first phase, early Neolithic [4.6.9], has pale-grey and burnished ware, sometimes painted in red ochre, a

coarse blackish ware and a small quantity of reddish-brown ware with purple painting. Edge-ground polished stone axes of soft schist occur in small numbers, but blades are absent. No houses, not even floors, have been encountered. Phase 2 of Pd I has the black burnished ware continued from Phase 1, and in addition brown-and-black ware, coarse dull-red ware, all the three with ochre paintings and a few black-painted red ware akin to the Jorwe Ware [11.11]. There are polished stone axes, this time of dolerite and trap, and rich blade industry of black quartzite with parallel-sided blades and lunates. Copper objects such as double axes [6.2] and fish-hooks give this phase a Chalcolithic [4.14.8] character. The houses indicated by post-holes are circular with bamboo fibres within. The floors are made of chipped schist stone and levelled by fine river sand. A double urn child burial in an oval pit has been met with in the excavated area itself. There are shell, quartz, steatite and bone beads.

Pd II represents an overlap of the Neolithic-Chalcolithic with the early Iron Age [4.16] culture. While the blade industry is absent, the Iron Age makes itself felt by arrowheads, spearheads, and knife-blades, together the typical Megalithic Black-and-red Ware [11.15.3] and all-black ware. Megalithic cairns and dolmenoid cist circles [4.17] are found on the w. of the site and to the n. of the hill slopes. The Pd has bone, carnelian, terracotta, gold, green stone and antler beads.

Several ¹⁴C dates are available for both the Pds. For Pd I, Neolithic, they range from 1710 to 1030 ± 105 to 100 B.C. and for Pd II, Overlap, 1095 ± 105 and 955 ± 100 B.C. This early date of the advent of iron in the s. is noteworthy. Thus the excavator's dates are: Pd I A, 1800-1500; Pd I B, 1500-100; and Pd II, 1100-800.

The animal skeletal remains [15.1] found in the excavation are as follows: Pd I A, cattle, sheep and goat, antelope, swine and carnivorous animals; Pd I B, horse, sheep or goat, antelope, canine and the cattle, the last predominant; and Pd II, pig, canine, sheep or goat, horse, fowl and cattle, here, too the cattle predominating. Among the vegetal remains [2] there are the millet *Eleusine coracana* Gaertn and *Elusine indica* Gaertn. ragi; *Paspalum scrobiculatum* Linn.; *Oryza sativa* Linn., rice; and some drupaceous fruits.

Nagaraja Rao, M.S., 1971, *Protohistoric Cultures of the Tungabhadra Valley*, Dharwar.—A. GHOSH

Halpur, Dt Raichur. Site with stone artefacts; probably a Chalcolithic [4.14.8] site.

Foote, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 125.

Halre, Dt Mysore. Megalithic [4.17.8] habitation site. IAR 1963-4.

Halsagram, Halsagara, Dt Bellary. Megalithic site with chamber tombs [4.17.8].

Megalithic Tombs & other Remains in the Deccan, Hyderabad, 1941, pp. 86-7.

Halshi, Dt Belgaum. Megalithic [4.17.8] and early historical site.

Karnatakadalli Jain Dharma Math Sanskriti, Dharwar, 1975, pp. 120-40.

Halvad, Dt Surendranagar. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3]) tools were found at a site about 2-4 km from Halvad on the Halvad-Dhrangadhra road on the banks of the Dokamardo nullah.

IAR 1963-4.

Halwana, Dt Saharanpur. PGW [11.14] site.

IAR 1968-9.

Halwi, Dt Bellary. Neolithic [4.6.9] site.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, pp. 77-8.

Hami, Dt Palamau. Nineteen bar-celts and six flat cells of copper were found on the bank of a small river [4.11].

Jour. Bihar & Orissa Res. Soc., 2, 1916, p. 481-4.

Hamirgarh, Dt Bhilwara. Site on the Banas with Series I (Lower Palaeolithic [4.2]) tools.

IAR 1958-9.

Hamirpur, Dt Ambala. PGW [11.14] site.

IAR 1964-5. Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 123.

Hamirpur-ka-Kot, Dt Ghazipur. Black-and-red Ware [11.6.3] site.

IAR 1963-4.

Hampasagara, Dt Bellary. Chalcolithic [4.14.8] site. A four-footed sarcophagus [12.9] is noteworthy.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 80.

Hanagandi, Dt Bijapur. Neolithic [4.6.9] Chalcolithic [4.14.8] site.

IAR 1965-6.

Hanamsagar, Dt Gulbarga. Megalithic [4.17.8] site.

Jour. Geological Survey of Hyderabad, 4, 1, p. 157.

Hanchinal, Dt Bijapur. Painted black-on-red Chalcolithic pottery [4.14.8]. See BALLOLLI.

IAR 1957-8.

Handi, Dt Bharuch. Middle and Late Stone Age (Middle Palaeolithic [4.3] and Mesolithic [4.5]) site.

IAR 1969-70.

Handignur, Dt Dharwar. Early historical site with the typical Black-and-red Ware [11.15.3], the Russet-coated Ware [11.22] and a dull-red-slipped ware.

IAR 1958-9.

Hangandi, Dt Bijapur. Megalithic [4.17.8] site with passage chambers of the Greek or Latin cross type and early historical remains.

Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 26-30.

Hange, Dt Ahmadnagar. Tools of Series II (Middle Palaeolithic [4.3]) and microliths [4.5].

IAR 1960-1.

Hankari, Dt Jalgaon. Early historical site yielding black-and-red ware.

IAR 1969-70.

Hannur, Dt Mysore. Megalithic [4.17.8] site.

Information from C. Krishnamurthy through A. Sundara.

Hansa, Dt Ranchi. Burial ground marked by about a hundred horizontal slabs and vertical pillars.

Patil, D. R., 1962, *Antiquarian Remains in Bihar*, Patna, pp. 159-60.

Hansapur, Dt Jabalpur. Microliths [4.5].

IAR 1959-60.

Hansi, Dt Hissar. PGW [11.14] site.

IAR 1963-4. Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 124.

Hansra, Dt Birbhum. Site yielding channel-spouted bowls.

IAR 1967-8.

Hantala, Dt Jabalpur. Microliths [4.5].

IAR 1957-8.

Hanumandhar, Dt Kutch. Historical site. See AJMEL.

IAR 1965-6.

Hanumandhoro, Dt Amreli. Red Polished Ware [11.23] site in the Shetrunji Valley.

IAR 1960-1.

Hanumanganj, Dt Allahabad. Late Stone Age (Mesolithic [4.5]) site.

IAR 1963-4.

Hanumangarh, (29°35'; 74°21'), Dt Ganganagar. A Rang Mahal [11.24] site on the SARASVATĪ much destroyed by a late medieval fort built over it. PGW [11.14] was also found.

Unpublished.

Hanumantapura, Dt Kolar. Megalithic stone circles [4.17.8].

IAR 1971-2; 1972-3.

Hanuman-Timba, Dt Mahesana. Late Historical red ware, grey ware and Red Polished Ware [11.23].

IAR 1960-1.

Hanuman Timbo (Gadhada), Dt Bhavnagar. Harappa [4.9] and early historical [4.18.2] site.

IAR 1971-2.

Hanuman-Vato, Dt Rajkot. Early historical [4.18.2] site.

IAR 1958-9.

Hanumati river, Dt Purulia. Handaxes, ovates, cleavers and other tools of Acheulian assemblage [4.2] were found in the cliff-sections of the stream. On the basis of typology, patination and state of preservation the industry may be divided into an earlier and later phase.

IAR 1967-8.

Haraha, Dt Shahdol. Lower [4.2] and Middle Palaeolithic [4.3] site.

IAR 1962-3.

Harahi-Bhituli, See GANGA VALLEY.

Harabolli, Dt Kolar. Site with black-and-red and red wares.

IAR 1972-3.

Haraipur (23°52'; 87°35'), Dt Birbhum, a small village where the writer's 1965-excavation (*IAR 1964-5*, p. 46) of a small mound known as Solkhana yielded a Chal-

colithic occupational deposit of about 2.6 m. The most important finds are extended burials of children oriented from n. to s. within the habitational areas. Though there are no grave goods the finds from the pits as well as from the deposits indicate clearly that the burials belong to the Chalcolithic folk [4.14.4]. No report on the skeletal remains has been received so far from the Anthropological Survey of India. The pottery consists of painted as well as plain black-and-red ware [11.6.5], black-on-red ware and white-painted red ware, besides a dull-red ware. The shapes comprise mainly the carinated bowl, convex-sided bowl, channel-spouted vessel and perforated vessel. The painted designs consist of horizontal and vertical strokes, herring-bone designs, short strokes like inverted commas, interconnected loops, rows of triangles and two joint arcs resembling flying birds. While most of the painted designs occur on the inner side of the vessels some of them bear paintings on both sides. The shapes and designs are identical with those at MAHISDAL and other Chalcolithic sites of W. Bengal as well as of c. India [11.10]. The other finds, though limited in number, consist of short blades, tiny Neolithic celts, a stone pestle, bone points and microbeads of steatite. Burnt clay nodules with reed impression and a charred wooden pole, 4 cm in diameter, indicate that the inhabitants lived in perishable huts.

—R.G. PANDEYA

Haralakote, Dt Kolar. Megalithic [4.17.8] site.

Seshadri, M., 1956, *Stone-using Cultures of Pre- & Proto-historic Mysore*, London, p. 16.

Haralhalli, Dt Dharwar. Early historical site. See HANDIGNUR.

IAI 1958-9.

Haralukote, Dt Mysore. Medieval site.

IAI 1959-60.

Haraniyava, Dt Ahmadabad. Mesolithic [4.5] site.

IAI 1971-2.

Harat, Dt Damoh. The basal cemented conglomerate in the basin of the Sonar yielded tools of the bifacial handaxe-cleaver facies [4.2]. Near by the upper gravels yielded tools of the flake-point-scraper complex [4.3] on chert and jasper, related to industries in the Son and Ken basins.

IAI 1957-8; 1958-9. *AI*, 17, 1961, pp. 5-36.

Haravgeri, Dt Belgaum. Neolithic [4.6.9]-Chalcolithic [4.14.8] site.

IAI 1965-6.

Harchiri (16°56'; 73°26'), Dt Ratnagiri. A unifacial chopper [4.2] was obtained from the cliff section on the river Kajvi.

IAI 1969-70. Joshi, R.V., & Bopardikar, B.P., 1972, in Deo, S.B., ed., *Arch. Congress & Seminar*, Nagpur, p. 49.

Hardakheri, Dt Saharanpur, OCW [4.12] site.

IAI 1963-4.

Hardaun, Dt Allahabad. Late Stone Age (Mesolithic

[4.5]) and Megalithic [4.17.3] site.

IAI 1963-4.

Harden, Dt Gurdaspur. Early historical remains. See ACHAL SAHEB.

IAI 1961-2.

Hardi, Dt Nimar. Microliths [4.5].

IAI 1958-9.

Hardi, Dt Palamau. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAI 1971-2.

Hardi, Dt Sitapur. A flat celt of copper [4.11].

AI, 7, 1951, p. 20.

Hardo Dugar, See GHUMLI.

Hardoi, Dt Hardoi. A flat copper celt and an antennae sword also of copper [4.11]. An extensive mound s.-w. of the town of Hardoi yielded pottery of the Kushan period.

Jour. Asiatic Soc. Bengal, N.S., 11, 1915, p. 5. IAI 1965-6.

Hardo Rawal Khurd, Dt Gurdaspur. Black-slipped Ware [11.13] and black-and-red and grey wares.

IAI 1961-2.

Hargaon, Dt Sitapur. Mound yielding an inscribed sealing [3.2] of the Sunga period.

IAI 1970-1.

Harha, Dt Shahdol. Early and Middle Stone Ages (Lower [4.2] and Middle Palaeolithic [4.3]) tools.

IAI 1962-3.

Harhar valley, Dt Santal Parganas. Microliths [4.5] were found about 17 km off Deoghar-Chakia road.

IAI 1961-2.

Harhi-Bhituli, Dt Pratapgarh. Microlithic site with burials and hearths.

Sharma, G.R., 1975, Presidential Address, Indian Prehistoric Soc., Delhi.

Hariana (22°36'; 70°15'), Dt Jamnagar. Late Harappa [4.10] site.

AI, 18, & 19, 1962 & 1963, p. 205.

Haribas Dt Saharanpur. Late Harappa [4.10] and OCW [4.12] site.

IAI 1967-8.

Haribera, Dt Singhbhum. Neolithic [4.6.4] site. Two important artefacts from the site comprise a chisel of extremely large size and a broad chisel. These two types occur exclusively in e. India and only a few have so far been found in c. India.

AI, 9, 1953, p. 77.

Harichandanpur, Dt Dhenkanal. Palaeoliths [4.2-4], Neolithic [4.6.4] chisels and a quartzite ring-stone were found.

IAI 1957-8; 1958-9.

Harihara, Dt Chitradurga. Neolithic [4.6.9] site.

Manavika Bharati, January 1978, 2, 1.

Harin, Dt Ranchi. Microliths [4.5].

IAI 1960-1.

Harinarayanpur, (22°8'; 88°13'), Dt 24-Parganas, on the e. bank of the Hooghly, 6 km s.-e. from Diamond Harbour town, has yielded and has still been yielding

from its eroded section numerous antiquities bespeaking the richness of the site. Explorations by individuals and various organizations—the Asutosh Museum, Indian Museum, ASI, and Directorate of the State Dept of Arch.—have recovered handmade and moulded terracotta human and animal figurines and toy carts of the Maurya, Śuṅga and Kushan periods, terracotta seals and sealing [3.2], silver punch-marked and unscripted cast copper coins [3.1], sherds of the NBPW [11.16] and Rouletted Ware [11.21], sprinklers, grey and black pottery and thousands of stone and glass beads, some with etched designs. A number of stone celts and hammerstones may indicate a prehistoric occupation as well.

Das Gupta, P.C., 1960, in *Jour. Dept of Letters, Calcutta Univ.*, New Series, 3, pp. 76-7 *et passim*; 1963, in *Bull. Director of Arch., W. Bengal*, Calcutta, 1; 1963, *Introduction to the State Arch. Gallery, W. Bengal*, Calcutta. Datta, K., 1961, in *Science & Culture*, 27, pp. 275-8; 1963, in *Modern Review*, July, pp. 39-44. Ghosh, D.P., 1968, *Studies in Museum & Museology in India*, Calcutta, pp. 50-1, 1973, in Mode, H., ed., *Great Centres of Art, Calcutta*, Leipzig. IAR 1955-6, p. 62; 1956-7, p. 81; 1957-8, pp. 70, 72; 1958-9, p. 76; 1959-60, p. 78; 1960-1, p. 68; 1961-2, p. 106; 1963-4, p. 95; 1964-5, p. 70; 1971-2, p. 88. —D.K. CHAKRABARTI.

Harindubri, Dt Singhbhum. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2-3]) tools and microliths [4.5].

IAR 1962-3.

Hariparigom, Dt Anantnag. Neolithic assemblage [4.6.1] similar to that revealed at BURZAHOM. Menhirs of the Burzahom type were also found.

IAR 1962-3.

Haripur¹, (30°50'; 76°45'), See SIRSALA VALLEY.

Haripur², Dt Ganganagar. Rang Mahal [11.24] site.

Unpublished.

Haripur³, Dt Gurdaspur. Black-slipped Ware [11.13] and black-and-red and grey wares.

IAR 1961-2.

Haripur⁴, Dt Jullundur. PGW [11.14], Śuṅga-Kushan and medieval glazed wares.

IAR 1961-2; 1963-4.

Haripur⁵, (32°1'; 76°10'), Dt Kangra. A few tools, mostly rolled, were found at the foot of the terrace. See BEAS-BANGANGA valley.

IAR 1966-7.

Haripur⁶, Dt Mayurbhanj. Neoliths.

IAR 1958-9.

Haripur⁷, Dt Sangli. Tools of the Middle and Late Stone (Middle Palaeolithic [4.3] and Mesolithic [4.5] Ages.

IAR 1962-3.

Haripura, Dt Chittaurgarh. A few Palaeolithic implements were found on the Bamani, a tributary of the Chambal.

IAR 1954-5.

Harmatia, Dt Junagadh. Red Polished Ware [11.23] site.

IAR 1957-8.

Harnahalli, Dt Raichur. Megalithic [4.17.8] site with

carin stone circles.

Jour. Geological Survey of Hyderabad, 3, 2, p. 76-82.

Harna-Kachar, Dt Mirzapur. Early Stone Age (Lower Palaeolithic [4.2]) tools including handaxes, cleavers and scrapers.

IAR 1962-3.

Harnaoda, Dt Ujjain. Historical site.

IAR 1971-2.

Harnikalan, See MIRZAPUR².

Harni Khurd (29°32'; 74°39'), Dt Hissar. Rang Mahal [11.24] site.

IAR 1967-8.

Harnol Khera, Dt Gurgaon. PGW [11.14] and early historical site.

Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.

Harnur, Dt Gulbarga. Neolithic [4.6.9]-Chalcolithic [4.14.8] site.

IAR 1963-4.

Harahalli, Dt Kolar. Megalithic [4.17.8] site.

Information from C. Krishnamurthy through A. Sundara.

Harpada, Dt Surat. Lower [4.2] and Middle Palaeolithic [4.3] and Mesolithic [4.5] site.

IAR 1967-8.

Hartopa. See DHALBHUM.

Harur, Dt Dharampuri. Megalithic [4.17.9] sites with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Harvgeri, Dt Belgaum. Chalcolithic [4.14.8] site.

P.B. Desai Felicitation Vol., Dharwar, 1971, pp. 4-30.

Harwan (34°11'; 74°53'), Dt Srinagar, on a hill identified with Ṣaḍ-arhad-vana mentioned in the *Rājatarāṅgini*. Excavation has revealed among other structures a *stūpa* and an apsidal temple with ancillary structures situated on two terraces. The masonry named diaper rubble style consists of a number of large boulders placed in a row, the interstices filled with smaller chips of stone. A noteworthy feature is the pavement made of square terracotta tiles with: (1) designs of frets, wavy lines, fish-bone patterns and flower designs; (2) leaves of an aquatic plant; (3) geese running or flying with flower petals or leaves in their bills; (4) other birds in the centre of a floral pattern and fighting cocks; (5) fighting rams, cows, elephants and deer; (6) archers on horseback shooting games; (7) female figures, sometimes dancing and beating a drum; (8) couples seated on a balcony, etc. Kharoṣṭhī numerals indicate the position of the tiles on the floor. The establishment has been dated to from about A.D. 200 to 500.

Kak, R.C., 1933, *Ancient Monuments of Kashmir*, London, pp. 105-11. Mitra, D., 1971, *Buddhist Monuments*, Calcutta, p. 111.

Hasanabad, Dt Guntur. A rock-shelter [13] was located at Gangabodu; grey ware sherds of the late medieval period were collected besides Palaeolithic tools.

IAR 1967-8.

Hasanapuram, Dt Nellore. Lower [4.2] and Middle

Palaeolithic [4.3] site in the Pennar river valley.

IAR 1965-6.

Hasangarh, Dt Bulandshahr. Śunga-Kushan red ware.

IAR 1964-5.

Hasanpur¹, Dt Bharuch, with a 2-m high mound, with the Lustrous Red Ware [11.9], the dish with a beaded rim, bowl with a sharply carinated shoulder and dish-on-stand, all of which equate it to RANGPUR II C and III.

Rao, S.R., in *AI*, 18 & 19, 1962 & 1963, p. 190.

Hasanpur², Dt Surat. Site belonging to the transitional period between the Harappa [4.9] and Chalcolithic [4.14] cultures.

IAR 1957-8.

Haselpur, Dt Indore. Lower Palaeolithic [4.2] site.

IAR 1970-1.

Hashmatpet, Dt Hyderabad. Out of the 40 cairn circles [4.17.7] noticed here two labelled Megalith I and Megalith II were excavated. Both showed on plan a double circle of stones enclosing a rectangular structure of stones, with the longer axes oriented n.-s. Megalith I yielded a few sherds of red ware and an indeterminate object of iron. The pottery obtained from Megalith II was the usual Megalithic Black-and-red Ware [11.15.3] and all-black and red wares. Some of the forms included the familiar funnel-shaped lids, ring-stands, bowls and dishes.

IAR 1970-1.

Hasrai, Dt Jhansi. Middle Palaeolithic [4.3] site in the bed of the Dhasan.

IAR 1960-1.

Hasra Kol, Dt Gaya. The valley is strewn over with brick and stone ruins representing the site of a town and a large religious establishment of the Buddhists.

Bloch, T., in *ASI-AR, Bengal Circle, 1902-3*, p. 14.

Hastināpura, **Hastinapur**, (29°9'; 78°3'). Dt Meerut, located on the right bank of an old bed of the Ganga, known in literature and tradition as the capital of the Kauravas of the *Mahābhārata* fame. The mound rises some 18 m above the surrounding plain, of which the upper 10 m represent occupational deposits. From n. to s. i.e. along the river-bank, the mound measures about 800 m, while in the e. to w. direction it is hardly half that size. From the top of the mound, looking e.wards one sees a thin stream, known as the Budhi Ganga (old Ganga), at a distance of about 1 km while the main stream is about 7 km farther away. On the bank of the Budhi Ganga, two places known as Draupadi Ghat and Karna Ghat remind one of the *Mahābhārata* personages. Three Jaina *tīrthankaras*, Śāntinātha, Kunthunātha and Aranātha, are believed to have been associated with Hastināpura. Presently there are two Jaina temples, belonging respectively to the Digambara and Śvētāmbara sects.

With a view to ascertaining the culture sequence, excavations were conducted at Hastināpura in 1950-52

by the writer on behalf of the ASI. From bottom upwards five Pds (I-V) of occupation with a break between each have been identified.

Pd I is represented by the sporadic occurrence of sherds of the OCW [4.12] in a deposit of brown clay which imperceptibly merges into the natural soil underneath, with no other sign of habitation. Evidence from other sites like BAHADARABAD, LAL QILA, SAIPAI, etc., indicates that this pottery is in fact a kind of black-on-red ware and is associated with the Copper Hoards of the Ganga valley [4.11]. Humus marking the top of the OCW deposit signifies that the site was deserted and covered with vegetation before the advent of the next occupation.

Because of its likely association with the *Mahābhārata*, times it is Pd II that brings Hastināpura into the limelight. Archaeologically the material culture of this Pd is known as the PGW culture [4.15] after the very distinctive ceramic industry of the times. The Ware [11.14] is grey in colour and painted over in black pigment with designs which include dots, dashes, horizontal, oblique or criss-cross lines, sigmas, spirals, *svastikas*, etc. The shapes comprise the dish, bowl and globular vase, i.e. *thālis*, *kaṭorās* and *loṭūs*, making the typical Indian dinner set. Besides the PGW there are the Black-slipped Ware [11.13], and black-and-red [11.6.3] and red wares, the last-named accounting for the largest percentage.

The people were in an agricultural-cum-pastoral stage of economy. Among the cereals produced by them particular mention may be made of rice [2.2.3]. The domesticated animals include the cattle, sheep, buffalo and pig, besides the horse which was an animal *par excellence* with the Aryans. Cut and charred bones of certain animals indicate the inclusion of meat in the dietary. Both copper and iron were used during Pd II. Among the copper objects are an arrowhead, a borer, an antimony rod [18.1] and a nail-parer. The iron objects are not many, but evidence from other comparable sites such as ATRANJIKHERA indicates that the people manufactured arrowheads, spearheads and daggers, besides nails, sickles, etc., of this metal.

Since the excavation has been essentially vertical, no house-plans have been obtained, but there is evidence of walls of wattle-and-daub, mud and even mud brick (size indeterminate). A fragment suggests the knowledge of burnt brick.

The other objects of the Pd include: beads of carnelian, agate, jasper and bone; bangles of glass (the earliest so far in India); and terracotta animal figurines representing the cattle and more particularly the horse. Pointed tools of antlers, commonly regarded as styli [20.5], have been also found, but as there is no evidence of writing these points may as well have been arrow-

heads. The discovery of an oblong die of bone, with 1, 2, 3 and 4 marks on the four sides, at ALAMGIRPUR and of a plano-convex gamesman in the PGW fabric at Noh indicates that these people played *chaupār*.

After the occupational strata had reached a thickness of about 2.5 m, a heavy flood occurred in the river washing away a considerable portion of the settlement. Evidence of this flood has been obtained in the form of a very pronounced erosion on the river-side edge of the mound; and at its toe there lay higgledy-piggledy the washed-away material. Besides, in four out of the six borings made in the river-bed itself, a part of the eroded material has been encountered at a depth of nearly 15 m below the water level. The devastation indeed was so great that the inhabitants had to flee the place.

After a lapse of time the site was reoccupied. But by now (Pd III) the people had given up the paintings on the grey ware whose fabric also became coarser. As their *de luxe* pottery now emerges a highly shiny ware the NBPW [11.16] in a variety of shades—black, steel-grey, indigo, silvery and even golden. More common, however, is the red ware.

Houses are now made not only of mud brick but also of kiln-burnt brick (size $44.5 \times 25.5 \times 7$ cm) and are oriented along the cardinal directions. A sense of town-planning is thus in evidence. There are covered street-drains for the discharge or sullage-water. A device for local soakage of water is noticed in which terracotta rings or jars are placed one over the other in a cylindrical pit. For draw-wells too terracotta rings have been used for lining [14.15]. Cylindrical barns of trapezoidal brick for the storage of cereals have been found. The economy on the whole had received a booster through enhanced agricultural production, in which profusion of iron tools may have played an important role. These include ploughshares, sickles, axes and adzes, besides arrow-heads, spearheads, nails, ferrules, etc. (Here evidence from other comparable sites has also been taken into account.) Both punch-marked and copper coins [3.1] testify to the developing economy, trade and commerce, the former being both of silver and copper, but the latter only of copper. The other finds of the Pd include: terracotta human and animal figurines; beads of semiprecious stones and glass; bangles and rings of copper; and the like. The Pd seems to have come to an end on account of a conflagration, traces of which have been noticed all over the site.

The fourth occupation, Pd IV, began some time in the 2nd century B.C., as evidenced by the occurrence in its lower levels of the coins of the rulers of Mathura and of the typical Śunga terracotta [17.2]. The pottery is now all red, sometimes stamped. The houses, of which seven structural Sub-pds have been noted, are of kiln-burnt brick (size $37 \times 23 \times 6.5$ cm) and duly oriented n. to s.

and e. to w. A street-drain and a terracotta ring-well in a house have also been noticed. The middle and late levels of the Pd have yielded respectively Yaudheya coins (beginning of the Christian era) and those imitating the coins of the Kushan king Vāsudeva (ascribable to the mid-2nd or early 3rd century A.D.). Amongst the other finds of the Pd mention may be made of rotary querns [6.19], terracotta votive tanks and a terracotta figure of Bodhisattva Maitreya (from the upper levels) which matches its counterparts in the contemporary Mathura sculpture.

How the Pd came to an end is not known, but Pd V began after a considerable lapse of time, late in the 11th century. The houses are now made largely with brick-bats robbed from the earlier structures. The usual run of pottery is dull-red, sometimes stamped, incised or painted. However an extraneous ware appears on the scene in levels which also yielded a coin of Balban (1266-77). The ware has a whitish gritty core, with geometrical and floral designs in blue, brown and green colours on the surface which is glazed. Local imitations of this pottery, with terracotta core, were also made. The Pd came to an end in the 15th century.

As seen above, Pds IV and V are dated on the basis of the coins found in them. Since there was a break of occupation between Pds III and IV, the end of Pd III may be placed in the 3rd century B.C. With the occupational strata ranging from 2 to 3 m in thickness, the beginning of this Pd may go back to early 6th century B.C. Since between Pds II and III many vital changes—such as the disappearance of the PGW, emergence of the NBPW, use of kiln-burnt brick for house construction, introduction of a system of coinage, etc.—took place, the gap between them may have been a couple of centuries or so. This would place the end of Pd II early in the 8th century B.C. With 2.5 m thick occupational strata to go by, its beginning may well go back to the 11th century B.C. Pd I would then be pre-1200 B.C.

The foregoing dating was done at a time (1952) when the ^{14}C method was not available in India. When it did become available and samples were sent, these gave rather late dates e.g. 340 ± 115 B.C. for a lower level of Pd III and from 570 ± 125 B.C. to 335 ± 110 B.C. for the upper levels of Pd II. At the same time it was noted by the laboratory that practically all the samples were mixed with rootlets, which made it difficult to rely on them. Duly corrected ^{14}C dates from other sites in the region, e.g. MATHURA, NOH and ATRANJIKHERA, indicate that the overlap between the PGW and NBPW may have taken place in the 7th-6th century B.C. (for calibration of ^{14}C dates, see 5.3; for a ^{14}C date of 550 B.C. the range of the 'corrected' date would be anywhere between 510 and 660 B.C. Ralph *et al.*, 1973), and the beginning of the PGW may go back even to the 12th

century B.C. At the w. sites in Haryana the PGW may have come into being even earlier, as indicated by its overlap in a pre-iron context with a culture derived from an amalgam of a pre-Harappa and Harappa cultures (evidence from BHAGWANPURA²). The dating at Hastināpura thus seems to be re-affirmed as follows: Pd I : first half of 2nd millennium B.C.; Pd II : early 11th to early 8th century B.C.; Pd III : early 6th B.C. to 3rd century B.C.; Pd IV : early 2nd century B.C. to 3rd century A.D., and Period V : late 11th to early 15th century A.D.

Finally one might pose the question regarding the historicity of the *Mahābhārata* vis-à-vis the results from Hastināpura. The epic is known to have changed its name and form, from the *Jaya* of 8800 verses through the *Bhārata* of 24000 to the *Mahābhārata*, of 100000 verses. The last named, as it mentions the Hūnas, is unlikely to be earlier than the 5th century A.D. And if Kṛṣṇa was a historical figure he is unlikely to have been later than Buddha who lived in the 6th century B.C. Thus, how far can one rely on an 11-time inflated book completed at least 1100 years after the event? For an answer one has to look up to the immutable witnesses of history, viz. the mounds at Hastināpura, MATHURA, KAMPIL, AHIC-CHATRĀ, KURUKSHETRA, etc. All these and scores of other sites associated with the story have invariably yielded the remains of the PGW culture in their lowest levels. To cap it all, Hastināpura has given the evidence of a flood which destroyed the PGW settlement; and KAUSĀMBĪ has yielded a degenerate painted grey ware; reminding one of the Purāṇic statement: 'When the city of Hastināpura is carried away by the Gāṅgā, Nicakṣu will abandon it and dwell in Kauśāmbī. There may therefore well have been a kernel of truth in the *Mahābhārata*, story and, if so, the event may be placed in the ninth century B.C.

Lal, B.B., 1954-5, in *AI*, 10, pp. 4-151. Ralph, E.K., Michael, H.N., and Han, M.C., 1973, in *MASCA Newsletter*, 9, 1, p. 9.—B.B. LAL.

Hata, Dt Damoh. Neolithic site.

Madhya Pradesh ki Ruparekha, p. 39.

Hatakhindi, Dt Ahmadnagar. Sherds of thick grey ware were picked up.

IAR 1960-1.

Hathahalli, Dt Bijapur. Coarse red-slipped ware, the Russet-coated Painted Ware [11.22] and Red Polished Ware [11.23].

IAR 1958-9.

Hathala, Dt Jamnagar. Red Polished Ware [11.23].

IAR 1957-8.

Hathibada, Dt Udaipur. Near NAGARI coins [3.1] of the Śibi Janapada of the 2nd century B.C. were collected and remnants of a shrine of Saṅkarṣaṇa and Vāsudeva of 250 B.C. were found. The Ghosundi inscription originally formed part of the enclosure.

ASI-AR, W. Circle, 1916, pp. 49-53.

Hathidhara, Dt Panch Mahals. Historical site near the

village of Lunkheda.

IAR 1968-9.

Hathijān, Dt Ahmadabad. Mesolithic [4.5] site.

IAR 1972-3.

Hathin, Dt Gurgaon. PGW [11.14] and early historical site.

Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.

Hathinala, Dt Mirzapur. Palaeolithic [4.2-4] site.

IAR 1959-60.

Hathinia Pahar, Dt Varanasi. Megalithic [4.17.3] site on the right bank of the river CHANDRAPRABHA.

IAR 1961-2; 1962-3; 1963-4.

Hathkhamba (17°0'; 73°25'), Dt Ratnagiri. Excavation at the natural caverns and rock-shelters near of Hathkhamba revealed a generalized section consisting of (from bottom upward): bed-rock of weathered blocks of laterite, unevenly spread at the bottom; lateritic gravel with pebbles of chalcedony, chert and other secondary minerals; reddish-brown earth; loose earth mixed with a few charcoal bits and rock fragments. At all levels both finished and unfinished microliths [4.5] were collected along with waste flakes, nodules of chalcedony, chert and other secondary minerals. The tools consisted of fine points, crescentic points, borers, blades, bladelets, very few scrapers, flakes and cores. See K(H)ANDIVLI

Guzder, S.J., 1977, in *Man & Environment*, 1, p. 5. *IAR* 1969-70; 1970-1; 1972-3. Joshi, R.V., & Bopardikar, B.P., 1976, in Deo, S.B., ed., *Arch. Congress & Seminar*, 1972, Nagpur, p. 50.

Hatibari, Dt Midnapur. Lower Palaeolithic [4.2] tools.

IAR 1968-9.

Hatikheda, Dt Bankura. Lower Palaeolithic [4.2] tools.

IAR 1959-60.

Hatikra, Dt Birbhum. Black-and-red Ware [11.6.5].

IAR 1967-8.

Hatimpur. See CHANDRAPRABHA VALLEY.

Hatipotar Danga, Dt Burdwan. Mound yielding black-and-red, black burnished and red wares.

IAR 1968-9.

Hatili, Dt Kangra. Choppers [4.2] in rolled condition.

IAR 1966-7.

Hat-Mohida, Dt Dhule. Late Stone Age (Mesolithic [4.5]) and microlithic tools.

IAR 1960-1.

Hatnur, Dt Dhule. Microliths and sometimes neoliths were found in association with the black-and-red painted pottery. Alongside was also found a coarse grey ware similar to that from the Chalcolithic levels at BRAHMA-GIRI and BAHAL [4.14.6].

IAR 1957-8.

Hatod, Dt Indore. Microliths in association with the black-and-red, black-and-cream and grey wares.

IAR 1958-9.

Hatho-II, Dt Jind. Ceramic complex comprises early SISWAL, SISWAL and late Harappa wares [11.4].

Suraj Bhan & Shaffer, J.G., 1978, in *Man & Environment*, 2, p. 62.

Hathras Fort, Dt Aligarh. PGW [11.14], NBPW [11.16], Black-slipped Ware [11.13] black-and-red ware, red ware of the Śunga-Kushan period and medieval ware.

IAR 1954-5; 1966-7.

Hathwani, Dt Mirzapur. Microliths [4.5].

IAR 1962-3.

Hatoda, Dt Dhule. Chalcolithic [4.14.6] site. See UDDHAMGADH.

IAR 1958-9.

Hatta, Dt Damoh. Middle Palaeolithic [4.3] and Neolithic site on the Sonar river.

AI, 17, 1961, pp. 5-36.

Hattargi, Dt Belgaum. Megalithic [4.17.8] site.

IAR 1968-9. Sundara, A., 1975, Early Chamber Tombs of s. India, Delhi, pp. 15-22.

Hattibellagallu, Dt Kurnool. Neolithic celts [4.6.8] and a few pieces of the Megalithic Black-and-red Ware [11.15.3].

IAR 1958-9; 1964-5.

Hattiga. See 4.14.4.

Hattikeri, Dt Karwar. Mesolithic [4.5] site yielding scrapers, points, flakes, blades, etc.

IAR 1972-3.

Hatti Khurd, Dt Dhule. Artefacts ascribable to the post-Middle Stone Age (Middle Palaeolithic [4.3]) but preceding the Late Stone Age (Mesolithic [4.5]) and comprising irregular and fluted cores, blades and blade-flakes, awls, scrapers and flakes.

IAR 1964-5.

Hattiyangadi, Dt S. Kanara. Early historical site [4.18.11].

Karnataka Bharati, 8, 3, p. 36.

Hatunia, Dt Indore. Mesolithic [4.5] site.

IAR 1970-1.

Hatyarakoh, Dt Indore. Microliths [4.5].

IAR 1958-9.

Hauda-Pokhara, Dt Deoria. Black-and-red Ware [11.6.3].

IAR 1963-4.

Havaligi, Dt Anantapur. Neolithic [4.6.8] habitation site.

Foot, R. B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras. *IAR 1965-6.*

Havananagar, Dt Gurgaon. PGW [11.14] and early historical site.

Punia, D. S., 1976, unpublished thesis, Kurukshetra Univ.

Hawara, Dt Rupnagar. Extensive but low mound with Harappa sherds [11.3].

IAR 1953-4. Suraj Bhan, 1975, Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide, Kurukshetra, p. 122.

Haziakheri, Dt Chittaurgarh. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1962-3.

Hebbal, Dt Bijapur. Ancient site.

Progress Report Kannada Res. Inst., 1941-6, p. 17.

Hebbal, Dt Gulbarga. Megalithic [4.17.8] site with a

stone alignment.

Jour. Geological Survey of Hyderabad, 4, 1, p. 157.

Hebbal, Dt Raichur. Neolithic [4.6.9]-Chalcolithic [4.14.8] site.

IAR 1970-1. Karnataka Bharati, 6, 1, pp. 64-75.

Hebbal Buzurg. See DON RIVER.

Hebsur, Dt Mysore. Microliths [4.5].

IAR 1960-1.

Hebya, Dt Mysore. Megalithic [4.17.8] habitation site.

IAR 1963-4.

Hedatole, Dt Mysore. Megalithic [4.17.8] habitation site yielding Black-and-red Ware [11.15.3].

IAR 1965-6.

Hegaratgi, Hegratgi, Dt Gulbarga. Stratified Middle Palaeolithic [4.3] site. Port-holed cists [4.17.8] were found near the bank of the Don river.

AI, 4, 1947-8, p. 307. IAR 1967-8.

Hemagiri, Dt Sundargarh. Prehistoric rock-shelter [13].

IAR 1969-70.

Hema-Kachar, Dt Mirzapur. Microliths [4.5].

IAR 1962-3.

Hemmige (12°28'; 70°45'), a small village in T. Narsipur Taluk, Dt Mysore, located on the bank of the Kaveri, 12 km e. of T. NARSIPUR, known as Hemmoge, 'large fort' in a Kannada inscription of Śrīpuruṣa (726-80) of the W. Ganga dynasty. In 1960-1 were discovered by the ASI (*IAR 1960-1*, p. 28) a site with the Russet-coated Painted Ware [11.22], etc., near the village and another with microliths and other Neolithic-Chalcolithic [4.6.9; 4.14.8] remains about 1 km away on a land in the midst of the river. In the same year the Karnataka State Dept of Arch. explored these sites and found that they were likely to provide material for the study of the Neolithic-Chalcolithic and early historical periods [4.18.10], corresponding to the faintly known Pds II and IV of T. NARSIPUR, the only site systematically excavated till then in the Kaveri valley. The extant portions of the sites designated as Area A and Area B, the latter called Adiyanaithu, are small. In 1964 the sites were excavated (Rao and Nagaraju, 1974).

The discovery of a number of stone tools on the river bank between the bathing ghat and the 'new dam' provides evidence for the earliest human activity in the area. The tools are of chert, quartz and fossil wood, many having a yellowish patina on the surface, from the exposed deposit of gravel and lime kankar overlain by a deposit of river alluvium about 20 cm thick and with the basal rock beneath. The tools are flake blades and varieties of scrapers produced by prepared core and cylinder hammer techniques [16.15.1] and have reasonably been assigned to the pre-Neolithic period.

In Area B three trenches, HG-III to -V, revealed five to three layers of cultural deposit. While in the first two remains of the Neolithic-Chalcolithic culture have been found in the second or third layers and downwards over-

lain by layers of hard brown soil, in the third the first layer represents an overlap of the culture with the Megalithic culture [4.17.9]. The site is thus primarily a single-culture one.

In HG-III two post-holes, a round-bottomed pot placed securely on three stones probably within a house are the only discovered indications of the domestic structures. The pottery, much worn-out owing to water logging, is of grey ware, buff ware and red ware; burnished and unburnished; and handmade. The total absence of pottery of coarse ware without slip or dressing or with paintings or incised decorations or perforated pottery is worthy of note.

While the burnished pottery is found in all the layers the unburnished one occurs only in the upper layer. Besides a head-rest [12.5] the pottery types are: the globular pot with flaring rim; lipped bowl; simple bowl; deep bowl; channel-spouted bowl; and lid with knob. A single buff spheroidal terracotta bead has been obtained from HG-III. The stone tools are short parallel-sided blades and fluted cores of black or dark-grey coarse chert, milky quartz and crystal without the evidence of the use of crested guiding ridge technique [16.15.2]. They do not favourably compare with those of the distinct parallel-sided blade industry of the Bhima-Krishna valley. Polished stone axes with pointed butt end of dolerite, spheroids and saddle querns [6.19] of granite for grinding form part of the cultural remains. Noteworthy is the find of a flat copper piece in an early level of HG-IV.

An unusual feature of the culture is the association of a crude flake industry comprising scrapers, flake blades, cores and many waste flakes made on river pebble, quartz, chert and quartzite. The tools are mostly without any prepared striking platform [16.15.2], the secondary retouch not being prominent, produced by mainly Levalloisian or pseudo-Levalloisian technique [16.15.1]. As these features are characteristic of the pre-Neolithic industry it appears that they are the survival of an autochthonous flake-tool complex prevalent in the upper Kaveri valley.

In Area A, two trenches, HG-I and HG-II, revealed respectively three and four cultural layers. All the layers in HG-I and the first two layers in HG-II contain early historical remains [4.18.10], while the fourth in HG-II has only Neolithic-Chalcolithic remains separated from layer 2a by a sterile layer, 3, of water-borne clay and fine sand. Thus two cultural periods have been recognized.

In Pd I have been, curiously enough, found only 18 pottery vessels in seven groups just above the natural soil and post-holes as well as flat clay patches and straight clay bands together indicating the existence of a mud house. Besides a head-rest the vessels are globular pots with flaring rim, three small bowls, six lipped bowls

and a carinated vase with spout, all handmade and of red ware, slightly burnished, and some with red ochre painting on the rim. No other cultural vestiges have been recorded.

In Pd II no structural remains have been noticed except a piece of burnt brick and a few iron nails. The pottery is of various fabrics: red polished, red-slipped, unslipped, black-slipped and Black-and-red Ware [11.15]. The domestic pottery comprises the large dish; deep beaker; small pot; deep bowl; disc-based bowl; shallow dish; high-necked vessel; lamp; dish-on-stand; spout; handle; etc. Some deep bowls and shallow dishes of the Black-and-red Ware are decorated on the exterior with white paintings of geometrical designs of lines/dots under a russet covering. A few pots have incised designs of herring-bone pattern, parallel oblique lines, etc.

A piece of roughly dressed shallow trough used as saddle quern, a rubber of granite and two broken polished stone axes of dolerite are the other domestic articles.

Bangle pieces mostly of shell, glass and bone, of plano-convex or rectangular or circular section, and biconic hexagonal beads and gadrooned beads of glass, soapstone, shell and terracotta are small in number. A copper ring made on a flattened thin wire is the only copper object found. The iron objects are: chisel; small spear- or arrowhead; small flat knife; curved knife, dagger, bar; rod, and ring. The occurrence of what may be described as a spindle whorl [6.25] or toy-cart wheel [16.19] fashioned on a potsherd may be mentioned.

Rao, M.H., & Nagaraju, S., 1974, *Excavations at Hemmige, Mysore*.—A. SUNDARA

Herakal, Herakal, Dt Bijapur. Early historical site yielding the Russet-coated Painted Ware [11.22], Red Polished Ware [11.23] and Black-and-red Ware [11.15.3].

AI, 4, 1947-8, p. 310. IAR 1954-5; 1955-6, *Progress Rep. Kannada Res. Inst.*, 1941-6, p. 11.

Herur, Dt Raichur. Neolithic [4.6.9]-Chalcolithic [4.14.8] and early historical [4.18.11] site.

IAR 1970-1. *Karnataka Bharati*, 6, 1, pp. 64-75.

Hetampur¹, Dt Birbhum. Microliths and flakes [4.5].

IAR 1961-2; 1965-6.

Hetampur², Dt Saharanpur. OCW [11.5] and red ware of the Śunga-Kushan assemblage.

IAR 1965-6.

Hiaro, Dt Udaipur. Series III (Mesolithic [4.5]) tools.

IAR 1959-60.

Hidkal, Dt Belgaum. Megalithic [4.17.8] site.

IAR 1966-7.

Hijikheri, Dt Chittaurgarh. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3]) tools and microliths [4.5].

IAR 1963-4.

Hiladahalli, Dt Dharwar. Early historical [4.17.8] site.

See HANDIGNUR.

IAR 1958-9.

Hillavakunde Hill, Dt Nilgiris. Megalithic [4.17.9] site.

Brown, J.C., 1917, *Prehistoric Antiquities in the Indian Museum at Calcutta*, Simla, p. 76.

Hindol Road, Dt Dhenkanal. Series I (Lower Palaeolithic [4.2]) tools.

IAR 1957-8.

Hindupur, Dt Mahbubnagar. Middle Palaeolithic [4.3] site.

IAR 1968-9.

Hingir, Dt Dhule. Chalcolithic remains [4.14.6].

IAR 1958-9.

Hinglajgarh, Dt Mandasaur. Palaeoliths and rock-shelters with paintings [13].

IAR 1958-9.

Hingna-Kinhi, Dt Nagpur. Megalithic site with stone circles [4.17.6].

IAR 1970-1.

Hingni, Dt Bijapur. A factory-site of the Chalcolithic blade industry [4.14.8] was located on the right bank of the Bhima. A Chalcolithic habitation site was also found; it was rich in microlithic blades along with fluted cores, the Jorwe Ware [11.11] and grey ware similar to that from BRAHMAGIRI.

IAR 1958-9.

Hingoni Budruk, Dt Dhule. Harappa potsherd [11.3] with two characters of the Indus script [20.4.1], late Harappa pottery [11.4] and Chalcolithic [4.14.6] habitation site.

Gururaja Rao, B.K., 1978, *Decade of Arch. Studies in s. India*, Dharwad, p. 22. IAR 1966-7; 1968-9.

Hingwania, Dt Indore. Microliths [4.5].

IAR 1958-9.

Hingwano, Dt Chittaurgarh. Black-and-red Ware [11.6.2] site. See DARAULI.

IAR 1966-7.

Hinoti, Dt Sidhi. Tools of the Early and Middle Stone (Lower and Middle Palaeolithic [4.2, 3]) Ages.

IAR 1962-3.

Hinshor-no-Timbo, Dt Mahesana. Early historical [4.18.2] site.

IAR 1967-8.

Hipparagi, Dt Bijapur. Neolithic [4.6.9], Chalcolithic [4.14.8] and early historical [4.18.11] site yielding some copper coins of the Satavahanas. Lower and Middle Palaeolithic tools [4.2, 3] were also found.

IAR 1958-9; 1963-4; 1965-6; P.B. Desai Felicitation Vol., Dharwar, 1971, pp. 4-30.

Hirakuravatti, Dt Bellary. Palaeolithic [4.2] site.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, pp. 77-8.

Hiran river, Dt Junagadh. A good number of Early Stone Age (Lower Palaeolithic [4.2]) tools consisting of handaxes, choppers and scrapers were collected from a modern bed and from a bouldery pebbly gravel exposed almost at bed-level on the right bank of the Hiran, 1-5

km upstream of the bridge joining Veraval and Kodinar.

IAR 1971-2.

Hirapur¹, Dt Chandrapur. Megaliths [4.17.6].

IAR 1963-4.

Hirapur², Dt Purulia. Microliths [4.5].

IAR 1959-60.

Hire and Chik Mulangi, Dt Belgaum. Lower Palaeolithic [4.2] site.

Joshi, R.V., 1955, *Pleistocene Studies in the Malaprabha Basin*, Poona, pp. 23-5.

Hire Benkal, Dt Raichur. Chalcolithic [4.14.8] site with an ash-mound [14.3]. Megalithic [4.17.8] habitation remains were also found together with burials such as port-holed chamber tombs, oblong chambers, rock-shelters and polygonal chambers. Rock paintings were found in the vicinity. Evidence of early historical iron-smelting was reported.

AR Hyderabad Dept of Arch., 1935-6, p. 30. IAR 1965-6; 1967-8; 1968-9. *Jour. Geological Survey of Hyderabad*, 3, 1, pp. 121-35. *Jour. Indian History*, 52, 1, pp. 21-32. *Man*, 55, pp. 94-7. Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 72-7, p. 180-6.

Hirehal, Dt Dharwar. Chalcolithic [4.14.8] remains such as sherds of grey ware of BRAHMAGIRI fabric, fragments of parallel-sided blades and a few flakes were found. A habitation site of the Megalithic [4.17.8] culture yielding the usual Black-and-red Ware was also discovered, together with historical remains.

IAR 1964-5.

Hirejantakal, Dt Raichur. Neolithic [4.6.9]-Chalcolithic [4.14.8] site.

IAR 1970-1. *Karnataka Bharati*, 6, pp. 64-75.

Hire Morab, Dt Dharwar. Megalithic [4.17.8] site.

Progress of Kannada Res. in Bombay State, 1947-52, p. 22.

Hirevidare, Dt Dharwar. Early historical [4.18.11] remains.

IAR 1960-1.

Hirikati, Dt Mysore. Megalithic burials of cairn and cist types [4.17.8].

IAR 1963-4.

Hirjihati, Dt Singhbhum. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3]) tools and microliths [4.5].

IAR 1962-3.

Hirke, Dt Hissar. Pre-Harappa [4.8], Harappa [4.9], late Harappa [4.10] site.

Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 122.

Hironji-ka-Khera, Dt Chittaurgarh. Microliths, black-and-red ware and associated pottery [4.14.1].

IAR 1956-7.

Hirur¹, Dt Belgaum. Lower Palaeolithic [4.2] site.

Joshi, R.V., 1955, *Pleistocene Studies in the Malaprabha Basin*, Poona, p. 23.

Hirur², Dt Bijapur. Chalcolithic [4.14.8] site. See ALMEL.

IAR 1959-60.

Hitimpur, Dt Varanasi. Early historical site.

- IAR 1962-3.*
H'laiuru, Dt Nilgiri. Megalithic [4.17.9] site.
 Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras, p. 228.
- Hogainakal**, Dt Dharmapuri. Megalithic burial [4.17.9] sites.
IAR 1969-70.
- Hokrani**, Dt Bijapur. Microliths [4.5].
IAR 1961-2.
- Holapur**, Dt Dharwar. Early historical site. See ADERKATH.
IAR 1961-2.
- Hole-Alur**, Dt Dharwar. Neolithic [4.6.9]-Chalcolithic [4.14.8] site on the MALAPRABHA yielding parallel-sided blades.
IAR 1966-7.
- Holi-Anveri**, Dt Dharwar. Early historical [4.18.11] site. See ANVERI.
IAR 1959-60.
- Holidhar**, Dt Bhavnagar. Harappa [4.9] site in the Ghelo valley.
IAR 1960-1.
- Holivalo** (21°57'; 71°40'), Dt Bhavnagar. Lustrous Red Ware [11.9] site corresponding to RANGPUR III.
AI, 18 & 19, 1962 & 1963, p. 205.
- Homfray Strait**, Dt Andaman. Kitchen-midden [14.11] site of the sub-Neolithic culture.
 Lapicque, L., 1894, in *Bulletin de la Société d'Anthropologie de Paris*, pp. 359-60.
- Honahalli**, Dt Raichur. Neolithic [4.6.9] remains.
 Foote, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 128.
- Honatti**, Dt Dharwar. Early historical site. See HANDIGNUR.
IAR 1958-9.
- Honavar**, Dt S. Kanara. Neolithic [4.6.9] site identified with the Naoura of the *Periplus*.
IAR 1968-9.
- Honguli**, Dt Bijapur. Thick coarse grey ware with ribbon flakes of chert.
IAR 1958-9.
- Honge**, Dt Belgaum. An open-air Lower Palaeolithic [4.2] site was located on the hill slopes near Honge, about 10 km n. of Belgaum.
IAR 1972-3.
- Hongenahalli**, Dt Kolar. Megalithic [4.17.8] site.
 Information from C. Krishnamurthy through A. Sundara.
- Honihalli** (16°12'; 75°41'), Dt Bijapur. Middle Palaeolithic [4.3] site rich in tools in semirolled condition. See GHATAPRABHA VALLEY.
IAR 1963-4, Pappu, R.S., 1974, *Pleistocene Studies in the Upper Krishna Basin*, Pune, p. 35.
- Honnaddi-Bagdal**, Dt Bidar. Megalithic [4.17.8] and early historical [4.18.11] site.
Karnataka Bharati, 11, 3.
- Honnavar**, Dt Hassan. Megalithic [4.17.8] site.
 Seshadri, M., 1956, *Stone-using Cultures of Pre- & Proto-historic Mysore*, London, p. 61.
- Honninamavanur**, Dt Belgaum. Megalithic [4.17.8] site. Gold coins are also reported.
 Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 15-23.
- Honnur**, Dt Mysore. Polished stone axes [4.6.9] and Black-and-red [11.15.3] and Russet-coated Painted Wares [11.22].
IAR 1961-2.
- Hope Town**, Dt Andaman. Kitchen-midden [14.11] site of the sub-Neolithic culture.
 Stoliczka, F., 1870, in *Proc. Asiatic Soc. Bengal*, pp. 13-23.
- Hordana**, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) tools.
IAR 1964-5.
- Hosadoddi**, Dt Mysore. Megalithic cist burials [4.17.8].
IAR 1961-2.
- Hosahalli**, Dt Mysore. Neolithic [4.6.9] remains.
IAR 1960-1.
- Hosakera**, Dt Raichur. Neolithic [4.6.9] site.
IAR 1967-1.
- Hosalli¹**, Dt Dharwar. Early historical [4.18.11] site.
Progress of Kannada Res. in Bombay State, 1950-1, p. 22; 1947-52, p. 34.
- Hosalli²**, Dt Kolar. Megalithic [4.17.8] site. (Same as HOSHAHALLI?).
IAR 1971-2.
- Hoshahalli**, Dt Kolar. Megalithic stone circles [4.17.8]. (Same as HOSALLI²?).
IAR 1970-1; 1972-3.
- Hoshalli**, Dt Bijapur. Chalcolithic [4.14.8] site. See ALMEL.
IAR 1959-60.
- Hoskera**, Dt Raichur. Chalcolithic [4.14.8] site.
Karnataka Bharati, 6, pp. 64-75.
- Hosritti**, Dt Dharwar. Early historical [4.18.11] site. See HANDIGNUR.
IAR 1958-9.
- Hosur¹**, Dt Belgaum. Megalithic site with passage chambers [4.17.8].
 Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 15-22.
- Hosur²**, Dt Dharwar. Megalithic stone circles [4.17.8].
IAR 1960-1.
- Huggiyam**, Dt Mysore. Black-and-red [11.15.3] and Russet-coated Painted Wares [11.22].
IAR 1961-2.
- Hulaghal**, Dt Bijapur. Chalcolithic habitation and burial [4.14.8] site.
IAR 1960-1.
- Hulakundi**, Dt Bellary. Neolithic [4.6.9] site.
IAR 1959-60.
- Hulana**, Dt Rohtak. Site yielding late Harappa [11.4] ware, PGW [11.14] and Black-slipped Ware [11.13].
Jour. Haryana Studies, 3, 1, p. 3.
- Hulas**, Dt Saharanpur. PGW [11.14] site.
IAR 1965-6.
- Hulaskhera**, Dt Lucknow. NBPW [11.16] site.
IAR 1965-6.

Hulikar, Dt Anantapur. Neolithic [4.6.8] habitation site and a: h-mound [11.3]. See AKKAMMAKONDA.

IAR 1965-6.

Hullur, Dt Dharwar. Early historical site. See ADERKATH.

IAR 1961-2.

Humayun Khera (29°27'; 74°47'), Dt Hissar. PGW [11.14], grey ware, black-and-red ware, Rang Mahal pottery [11.24].

IAR 1967-8. Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 123.

Humayunpur, Dt Meerut. Red ware of the Śunga-Kushan assemblage and medieval ware.

IAR 1962-3.

Hungunda, Dt Kolar. Post-holed cists [4.17.8].

AI, 4, 1947-8, p. 307.

Hunagundapatna, Dt Kolar. Megalithic [4.17.8] site.

Information from C. Krishnamurthy through A. Sundara.

Hunasakote, Dt Kolar. Megalithic [4.17.8] site.

IAR 1972-3.

Hundgaon, Dt Jodhpur. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1959-60.

Hunsgi (16°27'; 76°31'), Dt Gulbarga. Lower Palaeolithic [4.2] site on the seasonal stream Hunsgi-nala which joins the Krishna river about 35 km downstream. The principal tool types are handaxes and cleavers, picks, points, scrapers and backed knives. The Middle Palaeolithic [4.3] assemblage from the site is totally devoid of the blade-tool element. Chalcolithic [4.14.8] and Megalithic [4.17.8] remains have also been found. See DON RIVER.

Jour. Geological Survey of Hyderabad, 4, 1, p. 157. IAR 1965-6. *Jour. Karnataka Univ.*, 4, pp. 183-200. Misra, V.N., 1975-6, in *Purātattva*, 8, p. 36. Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, p. 57.

Hunugund, Dt Kolar. Neolithic [4.6.9] site yielding handmade burnished grey and red wares. Besides, Megalithic Black-and-red [11.15.3] Ware and all-black and red wares, rubbers and sling balls belonging to later periods were also found.

IAR 1970-1.

Hunugundpet, Dt Kolar. Extensive mound yielding Megalithic Black-and-red [11.15.3] Ware and red wares.

IAR 1970-1.

Hunukund, Dt Kolar. Megalithic stone circles [4.17.8].

IAR 1970-1.

Hunur, Dt Belgaum, in Hukeri Taluka on the left bank of the Ghataprabha, where earlier exploration had revealed Megalithic [4.17.8] remains. As it was feared that the construction of a dam at Hidkal, adjacent to the site, would submerge it, excavation was undertaken here in 1968-9 (IAR 1968-9, pp. 20-21) by S.R. Rao and his associates of the ASI. One of the largest megaliths with its capstone intact was taken up for excavation. The megalith comprised a huge cairn with three cists each

enclosed by a stone circle and platform and with a s.-w. passage between two cists, I and II. While cist I was square (2.5 m sq) on plan, cist II was rectangular (3.25 × 1.30 m). Cist I had six courses of dressed stones around; the enclosing rectangular platform, 15 × 15.6 m was of rubble lined with stone slabs. The walls were made of upright slabs and the floor of rammed rubble with the passage blocked on the s. end by the upright stone slab. Cist II, built over a single-course rubble bed, has a stone circle around and was finally enclosed by a platform 11.40 × 9.75 m, with an approach passage, the walls of the latter made of smaller dressed stones in four courses. On the s. end of the passage there was another cist, III, 3.55 × 2.95 m. On its w. side, besides a small circle, there were two dressed-stone slabs on a raised portion. Below one of the orthostats a pit, about 30 cm deep, containing ash and a few bones was noticed. Also found were vases in red ware and hemispherical bowls in the Black-and-red Ware [11.15.3].

Outside the stone circles enclosing the passage chambers there were a large number of pot-burials. They were found in the upper levels of cairn packings on the platform. The finds from the burials included limitedly the Black-and-red Ware, coarse red ware and a copper bell having a rectangular base and suspension loop on top. The shapes in the Black-and-red Ware comprised the bowl, globular pot of medium fabric with collared rim and the wide-mouthed jar with fragments of bone respectively. The red-ware jars were mostly used for child burial. There was, however, a total absence of iron objects.

Sundara, A., 1971, in *East & West*, 21, 1-2, pp. 97-102; 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 96-9. —A. BANERJI

Huradahalli, Dt Mysore. Cairn circles [4.17.8].

IAR 1962-3.

Hurhatti, Dt Gulbarga. Stratified Middle Stone Age (Middle Palaeolithic [4.3]) site. See HUNSGI.

IAR 1967-8.

Hurra, Dt Bhilwara. Red Polished Ware [11.23].

IAR 1958-9.

Husainabad. See DAULATABAD.

Huthu, Dt Mysore. Black-and-red [11.15.3] and Russet-coated Painted Ware [11.22]

IAR 1961-2.

Huthur, Dt Mysore. Cairn circles [4.17.8]. (Same as HUTTUR(?)).

IAR 1962-3.

Hutiya, Dt E. Nimar. Microliths [4.5].

IAR 1959-60.

Huttur, Dt Mysore. Same as HUTHUR?

IAR 1961-2.

Huvinhalli, Dt Bijapur. Chalcolithic [4.14.8] site. See ALMEL.

IAR 1959-60.

Ibrahimpur (17°33'; 76°31'), Dt Sholapur. Late Stone Age (Mesolithic [4.5]) site.

Nagaraju, S., 1971, in *Prof. K.A. Nilakanta Sastri Felicitation Vol.*, Madras.

Idindakarai, Dt Tirunelveli. Site with an extremely dense development of porous and compacted red soil (*teri* [9.5]) and with a loose scatter of microliths [4.5] and pottery and a Megalithic burial [4.17.9].

IAR 1972-3.

Idukal, Dt Anantapur. Neolithic [4.6.8] habitation site. See AKKAMMAKONDA.

IAR 1965-6.

Idur, Dt N. Kanara. Early historical site [4.18.12].

Information from A. Sundara.

Igatpuri, Dt Nasik. Late Stone Age (Mesolithic [4.5]) tools were found in the upper reaches of the rivers Darna and Vaitarna in the Taluka.

IAR 1966-7.

Iharda, Dt Ujjain. Chalcolithic [4.14.5] site.

IAR 1971-2.

Ijeri, Dt Gulbarga. Chalcolithic [4.14.8] and Megalithic [4.17.8] site.

Jour. Karnataka Univ., 4, pp. 183-200. *Megalithic Tombs & other Remains in the Deccan*, Hyderabad, 1941. IAR 1963-4.

Ikas, Dt Jind. Early historical site [4.18.1].1

IAR 1966-7.

Ikkalki (17°31'; 70°31'), Dt Gulbarga. Late Stone Age (Mesolithic [4.5]) site in the Amarja valley.

Nagaraju, S., 1971, in *Prof. K.A. Nilakanta Sastri Felicitation Vol.*, Madras.

Ikkarai, Dt Coimbatore. Megalithic site with cairn circles [4.17.9].

IAR 1962-3.

Ikkarai-Negamam, Dt Coimbatore. Site with Russet-coated Painted Ware [11.22].

IAR 1962-3.

Ikran, Dt Bharatpur. PGW [11.14] site.

IAR 1970-1.

Ilahabas, Dt Mainpuri. PGW [11.14] and NBPW [11.16] site.

IAR 1961-2.

Ilanjai, Dt Tirunelveli. Megalithic [4.17.9] site.

Indian Antiquary, 6, 1877, pp. 279-80.

Illia, Dt Varanasi, NBPW [11.16] site.

IAR 1963-4.

Imadpur, Dt Muzaffarpur. Excavation indicated the remains of a fort. Underneath a brick floor were found a number of potsherds, balls, and pieces of rounded stone.

The description of the pottery tallies with that of the NBPW [11.16]. A number of bronze figures recovered during the excavation are noteworthy.

ASI—AR, 16, pp. 84-8. Hoernle, H., in *Indian Antiquary*, 16, 1887, p. 165, *Proc. Asiatic Soc. Bengal*, 1881. Das Gupta, C.C., 1947, in *Proc. Indian Hist. Congress*. Majumdar, R.C., 1950, in *Jour. Asiatic Soc. Bengal*, 15. Sircar, D.C., 1955, in *Indian Hist. Quarterly*, 30, p. 382.

Inachgal, Dt Bijapur. Microliths (of unspecified nature) and remains of the early historical [4.18.11] period.

IAR 1961-2.

Inamgaon, (18°35'; 74°30'), located on the right bank of the GHOD, a tributary of the Bhima in Dt Pune. An extensive excavation at five places (INM I-V) conducted by the Deccan College from 1968-71 to 1972-74 have brought to light an extensive settlement of the Chalcolithic times [4.14.5, 6] which is divisible into three cultural Pds with an appreciable overlap between each. Besides a number of houses of different Pds have been exposed. (It is also an Upper Palaeolithic (4.4) site, Joshi and Pappu, 1979).

Pd I, Malwa culture (c. 1600-1400 B.C.). The first settlers at the site were the people of the Malwa culture [4.14.5]. They lived in large rectangular houses of wattle and daub and thatched roof. A complete house of this Pd is 6.64 m long and 4.42 m wide. There are a number of post-holes outside the walls and inside as well. The house is divided into two compartments by a dwarf wall over which probably stood a red screen. In the n.-e. corner is a circular mud platform, 10 cm high and 1.90 m in diameter, probably used for supporting a storage bin as is done even now. In the n.-w. corner is a rectangular *chulhā* with a flat stone daubed with mud in the centre obviously for supporting the cooking vessel. In the s.-w. corner is placed a huge jar, half embedded in the ground; it may have been used for storing grain or water. Some people also lived in pit houses, one of the exposed ones being circular on plan (diameter 3 m) and its sides straight. Since the pit is considerably deep (1.23 m), a step is provided in the s. side for descending into it. There are several post-holes along the periphery at the top for supporting the roof and on the e. the ground is gently sloped to ward off rain-water. In the n.-e. is a double *chulhā*, which shows that cooking was done in open outside the pit. Two pit-houses have shallow floors. It may be stated that even today such pit-houses are constructed in and around Inamgaon.

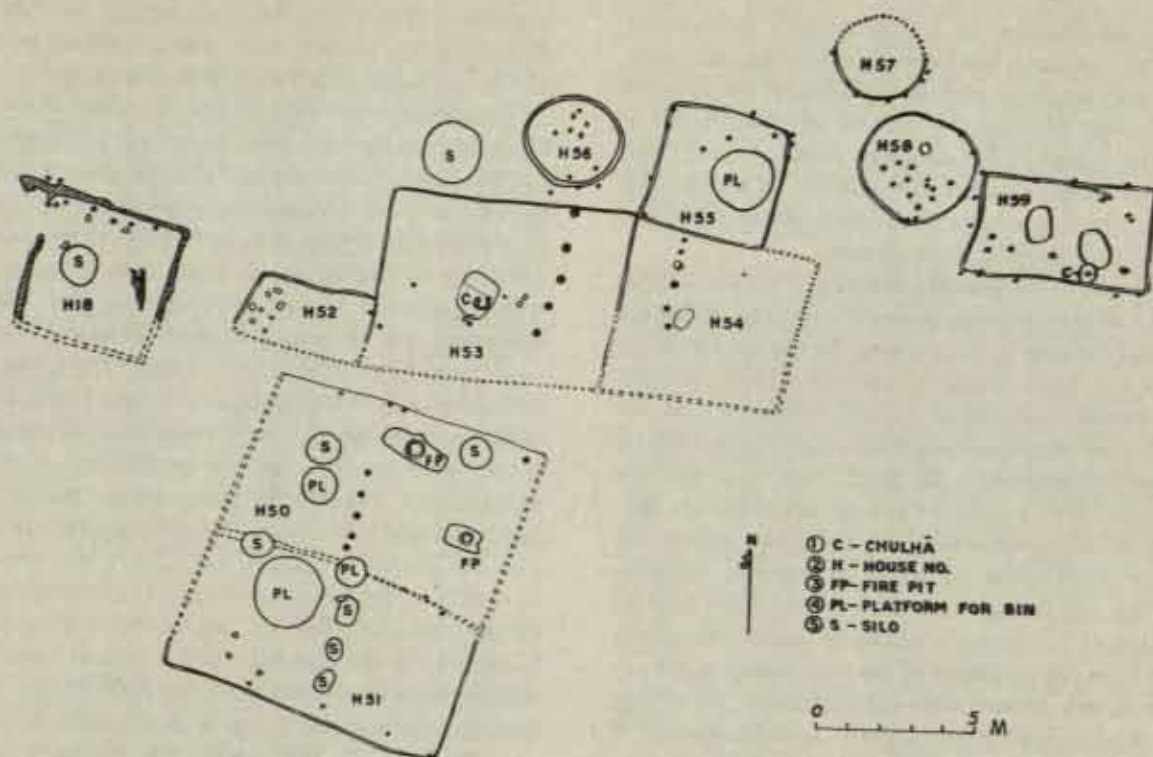


Fig 8. Inamgaon granary (house nos. 50 and 51) and house of the ruling chief (house nos. 52-56).

In one of the pit-houses has been found a child burial in two grey-ware urns placed horizontally mouth to mouth within a pit dug in the house floor, such twin burials being however, a distinguishing trait of the succeeding Jorwe culture [4.14.6]. The burial within the pit-house can therefore be regarded as belonging to the overlapping phase and the Malwa people at the end of Pd I can be said to have adopted this burial custom from the Jorwe people who had already arrived at the site.

The people subsisted on agriculture and hunting and fishing. They had domesticated animals such as the cattle, goat, sheep and pig. Their principal ware is a black-on-red painted pottery akin to the Malwa Ware [11.10], associated with which is a coarse handmade red/grey ware. The former is represented by the carinated bowl, spouted vessel and high-necked jar whereas in the latter are such utilitarian shapes as the bowl, basin and storage jar, sometimes decorated with incised and applied designs. The people used blade/flake tools of chalcedony and of copper which, however, is scarce.

Pd II, early Jorwe culture (c. 1400-1000 B.C.). ¹⁴C determinations show that around 1400 B.C. the people of the Jorwe culture arrived at the site and in a short while became predominant. Their occupation marks the most prosperous period in the history of the settlement. They adopted the house plan of their predecessors, but their houses are generally of smaller dimensions (about

5 × 3 m). There appears to be some attempt at the planning of the settlement; the houses are situated about 1½ m from each other, the intervening space forming a sort of road as at present. The extensive settlement is spread over the whole of the site save INM II which was occupied during Pd I only. The alignment of the houses suggests that it was probably a linear settlement.

The houses are built carefully with well-laid floors, which were periodically repaired and frequently plastered with mud and lime. One of the houses has a channel dug outside in the courtyard for draining out rain-water from the roof. The houses in the c. part of the principal habitation area, INM I, are in a better state of preservation. Here usually there is at least one set of four flat stones, probably for supporting a four-legged storage jar. In utter contrast to this, the houses in the w. part of INM I have pit silos dug into the house floor; their average diameter is 1 m and depth 1 m. The silos have straight sides and flat bottom plastered with lime. The evidence shows that they were the houses of artisans such as the potter, the coppersmith and so on.

A unique structure laid bare close to the craftsmen's quarters in squarish on plan (10.50 × 9.15 m), partitioned into two parts by rows of mud platforms for storage bins. The low mud walls (30 cm high) had split-bamboo screen plastered with mud. The structure contains six pit silos of varying sizes and seven round mud

platforms, all disposed in a very orderly fashion for storing grain; hence it has been identified as a granary. In some cases the sides and the bottoms of the silos are lined with lime whereas the bottom of some is full of sand. In the s. half of the structure there are two large fire pits, seemingly ritualistic in purpose, at the bottom of each of which is a large mud lump, flattened at the top, possibly for keeping a receptacle.

Just to the n. of the granary and adjoining it is a large house (25 × 10 m) consisting of five rooms, one of them a kitchen and another a store room. In the courtyard of the house has been found a symbolic burial, without skeletal remains, consisting of one complete and another half four-legged unbaked urns containing a Jorwe painted jar covered with a lid. In the same area but at a slightly later level is another similar urn with the skeleton of a 35 years old male. The elaborate burials and the multiroomed house no doubt belonged to a dignitary, perhaps the ruling chief. This is also supported by the location of the granary where he stored the grains collected from the members of the community as tax.

A huge n. to s. diversionary embankment, 240 m long and 2.25 m wide, is seen near INM V. It is constructed of rubble set in mud mortar at the base, the upper part being probably earthen. A channel, 4 m wide and 3.50 m deep, runs almost parallel to the wall. The water thus diverted could be stored in the channel and could have been used for irrigating the neighbouring fields, the excess water being drained out through a stream near the s. end of the channel.

A potter's kiln of this Pd is a unique find. It is like a huge trough made of clay, embedded in the ground on stone foundation. It appears to have been built *in situ*. Its maximum diameter is 1.75 m and at a depth of 60 cm from the top exist clay cushions in the kiln placed over the fire chamber down below. The cushions are oval in shape and have a hole in the centre and a groove on the middle of each side; the hole in the centre served as an outlet for the hot gas. In the base of the kiln are flues radiating from the centre. To the n.-e. of the kiln is the fire passage lined with stones which reaches below the bottom of the kiln, where an andiron of clay is placed. It is oblong in shape and has projecting corners and curved upper sides for supporting firewood. By the side of the kiln have been found the remains of a furnace probably for copper-smelting.

The mixed economy of the Jorwe people was based on farming, hunting and fishing. They raised a number of crops such as wheat, barley, rice and lentil [2]. The estimates for the population and food requirements lead us to believe that the farmers must have cultivated the Black Cotton Soil [9.1] which abound in the region. The most important cereal is barley which has also been found in Pd I. But wheat appears in Pd II probably

because of the facility of irrigation made available by the diversionary channel. Rice was cultivated possibly in small, carefully tended plots as is done today.

The principal ceramic of the Pd is the characteristic black-on-red Jorwe painted pottery [11.11] represented by the concave-sided carinated bowl, spouted vessel and high-necked jar. Associated with this is a coarse red/grey ware which continues from Pd I. Huge storage jars are entirely handmade; they are sometimes decorated with incised and applied patterns. The tool outfit of the preceding Pd continues in this Pd also. The people worshipped the mother goddesses [12.6], one variety with head and the other headless. In a house belonging to the early levels of this Pd have been found in a small corner hole an oval clay box containing a mother goddess figurine and over the box another figurine but without head and a clay bull. All the objects are unbaked indicating their occasional use. There is also a clay ring in which the figurine could be kept in a standing position during worship. But the most noteworthy feature is blind hole in the abdomen of the female figurine and a similar hole in the body of the bull. When a stick is inserted through both, the mother goddess snugly sits over the bull. The headless figurine recalls to one's mind the goddess Visirā of the *Mahābhārata* who is supposed to be connected with the welfare of children.

The dead were buried inside the house in a pit specially dug for the purpose. The children were buried in two red/grey-ware urns which were placed in the pit mouth to mouth horizontally. In the case of adults the entire body was placed within the pit, but before doing so the portion below the ankle was chopped off—a practice not followed in the burial which has been identified as that of the ruling chief. Vessels, probably containing food and water, are found placed inside the pit.

Pd III, late Jorwe culture (c. 1000-700). The size of the settlement appears to have shrunk during this Pd possibly because of changes in the climate which was becoming more and more arid. The house plan now undergoes a drastic change; the large rectangular houses of the preceding Pd are replaced by small round huts which however start appearing at the end of Pd II. The late Jorwe habitation is a nucleated settlement with clusters of round houses which are tightly spaced units. The overall economic degeneration is clearly reflected in small round huts of wattle and daub with thatched roof. The house floor is made with due care and even the outside area around the hut is rammed with *murrām* and plastered with mud. The diameter of the huts varies from 2.50 to 4.25 m. Every house has a set of four flat stones for supporting a four-legged storage jar. A feature of the settlement of this Pd is that most of the houses in the w. part of the principal habitation area (INM I) belongs to

artisans such as the goldsmith, lime-maker, etc.

The decline in the economic conditions is also reflected in the pottery which, though still of the painted Jorwe variety, becomes coarse in fabric. The black-and-red ware [11.6] appears in the upper levels of this Pd. The material equipment of the preceding Pd continues in this Pd also. Along with the mother goddess, the people also worshipped a god, whose unbaked clay figurines have been found. The habitation was finally deserted around c. 700 B.C.

Dhavalikar, M.K., 1978, in *Purātattva*, 8, Joshi, R.V., Pappu, R.S. 1979, in *Man & Environment*, 3, p. 86. Sankalia, H.D., Ansari, Z.D., & Dhavalikar, M.K., 1975, in *Expedition*, 17, 2, pp. 2-11; (in press) *Excavations at Inamgaon*.—M.K. DHAVALIKAR

Inchgeri, Dt Bijapur. Sherds of Red Polished Ware [11.23].

IAR 1957-8.

Indapahari, Dt Santal Parganas. Microliths (Mesolithic [4.5]?).

IAR 1963-4.

Indara, Dt Sawai Madhopur. A cliff section on the bank of the river Chambal near the village yielded handaxes and scrapers belonging to the Lower Palaeolithic Age [4.2] as also a few tools consisting of scrapers, points, etc., of the Middle Palaeolithic [4.3].

IAR 1972-3.

Indargadh (24°27'; 75°45'), Dt Mandsaur, in the Chambal valley, a deserted place about 5 km n. of Bhanpura, with Lower Palaeolithic [4.2] and microlithic [4.5] tools in front of rock-shelters, excavated by the writer with the assistance of V.S. Wakankar in 1959 (IAR 1958-9, p. 28). The main object of the excavation was to find out the remains of a Śiva temple mentioned in a Rāṣtrakūṭa inscription dated A.D. 709-10 found at the site some four years earlier (Trivedi, 1955).

The excavation conducted in an oblong area of 37 by 18 m has revealed the remains of large temple, its parts being mainly decorated jambs, plinths, pillars and pilasters, fragments of *toranas* and arches and the like, besides sculptures, noteworthy of them being those of Śiva and Śaivite deities, Bhairava, Pārvatī and Nandin, Sūrya, Viṣṇu, Lakṣmī and Vārāhī, in various poses and with their respective attributes. The operation has also shown that the main temple on the site had subsidiary shrines containing deities in the four directions. An interesting find is a slab showing the figures of a pair of boars being attacked by a pair of tigers, the tiger pouncing upon the boar going ahead and the tigress biting the sow from behind. On stylistic grounds the sculptures can be assigned to the pre-Paramāra period, i.e., to about the 8th-10th centuries. Besides the other minor objects the find of a number of fragments of weapons of iron, e.g., parts of scimitars, arrowheads and mace-heads, may show that a skirmish took place on this site against enemies.

To ascertain the extent of the site, a trench was laid to the adjacent n.-e. side of the area. This has yielded objects comprising microliths and fluted cores and beads of semiprecious stone, along with implements for preparing them such as two fragments of fine-grained stones with parallel grooves incised on them to give the beads the desired shape.

On the opposite side, at a distance of about 125 m, another trench, 5 by 4 m, was dug down to the virgin soil. The lower level of this trench shows portions of walls of brick and undressed stone, giving the idea of the existence of a small house comprising three rooms. One of these rooms was utilized as the dressing room for ladies, as is obvious from finds like antimony rods [18.1], a few pieces of bangles and a gold ear ring. Another room was for worship, and the third one, besides fragmentary objects of iron weapons, had three skeletons, one of which was pierced with the tip of a spear. The house was burnt, as could be known from the effects of fire noticed in burnt brick, ash and burnt corn found in the upper layers of the trench. All this tends to show that the house fell prey to invaders, perhaps the same as the destroyers of the temple.

The potsherds recovered are of the same type and time as are found at the site of the temple, showing no special peculiarities. The accumulated evidence goes to suggest that the site extending over about 8 sq km, on the bank of a nullah locally known as Reva, was occupied and subsequently deserted, almost simultaneously with the construction and subsequent destruction of the temple, i.e. from about the commencement of the 8th to about the end of the 12th century.

Trivedi, H.V., 1955, in *Jour. Bihar Res. Soc.*, 41, p. 1.—H.V. TRIVEDI

Indaram, Dt Chandrapur. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1961-2.

Indergarh, Dt Datia. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAR 1971-2.

Indi¹, Dt Bijapur. Neoliths [4.6.9] and painted black-on-red Chalcolithic [4.14.8] pottery, as also sherds of Red Polished Ware [11.23]. See INGALGI. (Same as following?).

IAR 1957-8.

Indi², Dt Bijapur. Neolithic-Chalcolithic [4.14.8] site yielding parallel-sided blades, flakes of black trap, black-painted red ware comparable with that of BRAHMAGIRI I A and grey ware. (Same as preceding?)

IAR 1965-6.

Indilapur, Dt Shahjahanpur. Shouldered celt of copper [4.11].

AI, 7, 1951, p. 20. IAR 1965-6. Also information from S. Asthana.

Indor, Dt Bulandshahr. Early historical [4.18.1] site.

Indore, Dt Indore. Middle Stone Age (Middle Palaeo-

- lithic [4.3]) site about 3 km from Indore. Also cleavers, discoids, scrapers and handaxes [4.2] near Sukhaniwas Palace, Indore.
IAR 1959-60; 1966-7.
- Indranaja**, Dt Kheda. Mesolithic [4.5] and early historical site [4.18.2].
IAR 1971-2.
- Induri¹**, Dt Ahmadnagar. Lower Palaeolithic [4.2] site.
IAR 1958-9.
- Induri²**, Dt Pune. Tools of Series II (Middle Palaeolithic [4.3]).
IAR 1955-6.
- Induru**. See KANDLERU VALLEY.
- Indva**, Dt Dhule. Artefacts ascribable to post-Middle Stone Age (Middle Palaeolithic [4.3]) and pre-Late Stone Age (Mesolithic [4.5]).
IAR 1964-5.
- Ingaldhal**, Dt Chitradurga. Megalithic [4.17.8] and early historical habitation site.
 Information from A. Sundara.
- Ingalgieri**, Dt Bijapur. Chalcolithic habitation and burial site. See BAGLUR.
IAR 1960-1.
- Ingaldi**, Dt Bijapur. Neolithic tools, mostly axes, made on fine-grained trap, as also painted black-on-red pottery characteristic of the Chalcolithic cultures of the Deccan [4.14.8] and a thick grey ware similar to that found at BRAHMAGIRI and BAHAL in association with microliths. Sherds of the Red Polished Ware [11.23] were also collected.
IAR 1957-8.
- Ingavaripalem**, Dt Chingleput. Lower Palaeolithic [4.2] site.
 Sewell, R., *Antiquarian Remains in the Presidency of Madras*, Madras, p. 149.
- Intali**, Dt Udaipur. Microlithic site. See BARA BEDLA.
IAR 1956-7.
- Ippatam**, Dt Guntur. Palaeoliths [4.2].
 Foote, R.B., 1914, *Indian Prehistoric & Protohistoric Antiquities*, Madras.
- Iralabanda**, Dt Chittoor. Port-holed cists [4.14.7].
Indian Antiquary, 10, 1881, pp. 97-100.
- Iraladinne**, Dt Mahbubnagar. Lower Palaeolithic [4.2] site.
IAR 1967-8.
- Irlapadu**. See DODLAVAGU VALLEY.
- Irugalur**, Dt Coimbatore. Megalithic cairn circles [4.17.9].
IAR 1962-3.
- Isai-Khas**, Dt Mainpuri. Site with PGW [11.14].
IAR 1961-2.
- Isakatageli**, Dt Chittoor. Lower [4.2] and Middle Palaeolithic [4.3] site.
IAR 1968-9.
- Isapur**, Dt Saharanpur. PGW [11.14] site.
IAR 1965-6.
- Isarda**, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) site.
IAR 1964-5.
- Ishvariya**, Dt Bhavnagar. Harappa [4.9] and early historical [4.18.2] site. See VALPURA.
IAR 1971-2.
- Ismail (Kola ala)**, Dt Rohtak. Site with PGW [11.14], Black-slipped Ware [11.13] and NBPW [11.16].
Jour. Haryana Studies, 3, 1, p. 5.
- Ismailkhanpet**, Dt Medak. Site with a number of microliths (of unspecified affiliation) sherds of Megalithic Black-and-red Ware [11.15] and a few etched carnelian beads.
IAR 1958-9.
- Ismailpur**, Dt Bulandshahr. Early historical [4.18.1] site yielding coarse grey ware, Black-slipped Ware [11.13] and plain red ware of Sunga-Kushan type.
IAR 1965-6.
- Isunpera**, Dt Palamau. Middle Stone Age (Middle Palaeolithic [4.3]) site.
IAR 1971-2.
- Iswarwada**, Dt Sagar. Tools of Series I and II (Lower and Middle Palaeolithic [4.2.3]) were found in the bed of the Bina.
IAR 1960-1.
- Itagi¹**, Dt Dharwar. Early historical [4.17.8] site. (Same as ITTAGI?)
IAR 1960-1.
- Itagi²**, Dt Sangli. Russet-coated Painted Ware [11.24] was found on the bank of the Tungabhadra river.
AI, 4, 1947-8, p. 310.
- Itaha**, Dt Allahabad. Upper Palaeolithic [4.4] factory site.
IAR 1969-70.
- Itali**. See SHIVNA VALLEY.
- Itampadu**, Dt Nellore. Lower [4.2] and Middle Palaeolithic [4.3] site in the Pannar valley.
IAR 1965-6.
- Itar-Pahar hill**, Dt Rewa. Ten painted rock-shelters [13], 36 km from Rewa on the road leading to Sitapur and Manganj, situated within a radius of 5 km. Four factory sites of the Middle and Late Stone (Middle Palaeolithic [4.3] and Mesolithic [4.5]) Ages were located in the rock-shelters.
IAR 1961-2.
- Itaura**, Dt Banda. Polished stone axes and hammer stones (of Neolithic affiliation? [4.6.3]).
IAR 1961-2.
- Itauva**, Dt Basti. Black-and-red Ware [4.13] site.
IAR 1963-4.
- Itawa**, Dt Ujjain. Historical (of unspecified nature) site.
IAR 1971-2.
- Ite**, Dt Ranchi. Site yielding a thin elongated but mostly chipped and slightly polished celt of schist.
 Roy, S.C., 1916, in *Jour. Bihar & Orissa Res. Soc.*, 2, p. 69.
- Itga**, Dt Dharwar. Early historical [4.18.11] Remains.
IAR 1960-1.

Ittagi, Dt Dharwar. Site on the Tungabhadra with Russet-coated Painted Ware [11.22] and Megalithic Black-and-red Ware [11.15] and structural remains of brick. (Same as ITAGI!?)

Progress Rep. of Kannada Res. in Bombay Province, 1941-6, pp. 2, 63-5. IAR 1954-5.

Ittal, Dt Jind. Early historical site with grey ware.

IAR 1966-7.

Itwa, Dt E. Nimar. Site with microliths [4.5].

IAR 1960-1.

Itwan, Dt Varanasi. Site with black-and-red ware [11.6] and NBPW [11.16].

IAR 1962-3.

J

Jabalpur, Dt Jabalpur. On the slopes of the Madan Mahal hill a handaxe and a painted discoid of quartz [4.2] along with many fluted cores and flakes were found. Jabalpur itself has yielded tools of Series II (Middle Palaeolithic [4.3]) and a Copper Hoard [4.11].

Proc. Asiatic Soc. Bengal, 1869, p. 60. *Indian Antiquary*, 34, 1905, p. 240. *AI*, 6, 1950, p. 71.

Jabiran. See KALAN².

Jabugam, Dt Bharuch. Site with stone tools, cores, scrapers and flakes.

IAR 1964-5.

Jadaval, Dt Raichur. Megalithic [4.17.9] site.

IAR 1970-1.

Jaddappatti, Dt Gorakhpur. Site with NBPW [11.16].

IAR 1963-4.

Jaderua (26°10'; 78°5') Dt Gwalior, a suburban village near the Residency buildings of Gwalior, excavated in 1971 on behalf of the Jiwaji Univ., Gwalior, and the ASI, by B.B. Lal and the writer (*IAR* 1971-2, p. 29). Measuring about 13 sq km in area and 3 m in height, the mound is largely occupied by the modern village. Excavation in the w. slope of the mound established the following cultural sequence.

Pd I (c. 6th-5th century B.C.): The earliest settlement is characterized by the use of the black-and-red ware [11.6], thin and thick plain grey ware and a fine red ware. The types were mainly the dish and bowl. No house plan was obtained. The few antiquities consist of a polished sandstone muller, a saddle quern [6.19] and some terracotta and crystal beads.

Pd II A (c. mid-4th to 2nd century B.C.): While the black-and-red with its associated wares ceased, the NBPW [11.16] emerged with a thicker variant of red ware. The NBPW is crude with no recognizable shapes, but the red ware contains all the typical shapes of the age, such as the rimless *hāṇḍī*, miniature bowl and jar similar to type 10a of AHICCHATRĀ (*AI*, 1, 1946, p. 43), found elsewhere too in levels of comparable date. The excavated building remains consist of a 16 m long wall, running from n.-e. to s.-w. with post-holes at 2 m intervals, besides a room with a drain. The bricks measure 45 × 22.5 × 7.5 cm. The walls are erected on the foundation of stone rubbles and iron slag. The antiquities comprise iron chisels, spearheads, arrowheads, a sickle and beads of terracotta, agate and carnelian. A huge

quantity of slag [16.9.4] suggests an extensive iron-smelting on the spot.

Period II B (1st century B.C. to 1st century A.D.): Square cast copper coins [3.1] bearing the tree-in-railing and crescent-on-hill symbols and two terracotta figurines, one of them being an exquisite representation of Lakṣmī with lotus in hand, were found.

Pd III (9th-10th century): The pottery comprises the knife-edged bowl, carinated *hāṇḍī* and spouted vessel. The structures are irregular, made of stone rubble and roughly shaped stones.

—K.P. NAUTIYAL

Jadigenahalli, (13°3'; 77°51'), Dt Bangalore, on Bangalore-Malur road, the megaliths [4.17.8] lying in a vast field but badly destroyed by a modern road and a water course. Each megalith has a stone circle formed by trap boulders of various sizes, the largest being 6 m in diameter. Four of them were excavated by the State Dept of Arch. under Seshadri in 1957 (*IAR* 1956-7, p. 34).

Megalith I, already partly washed away by the water course to a depth of over 2 m, showed a section with a rubble packing at the top, followed downwards by rammed black clay and brown clay down to the bottom of the pit. About 2.6 m below the top humus the pit was divided into two subpits, each about 1.4 m in depth; one of them was used for depositing implements and pottery and the other for laying a 2 m long and 45 cm high sarcophagus [12.9] cradle-like in shape and with six pairs of hollow legs, capped by a lid with three holes at the n. and s. ends. While the body of the sarcophagus of red ware was handmade with a wavy-line ornamentation enclosed between two lines of chain ornamentation, the legs, also of red ware, were wheel-turned and luted to the body before firing. The sarcophagus was without any skeletal remains; nor was there any ash inside.

Megalith II, an intact one, had two concentric stone circles of untrimmed trap boulders around it. The inner circle was found to enclose a pit 5.50 m deep, gradually sloping to half of its depth, whence it assumed verticality. From about 2 m above the bottom the pit branched off into two subpits, one containing a n.-s. sarcophagus placed over a 30 cm thick paddy of rice husk, with heaps of pottery, iron objects like sword, dagger, hoe, trident,

rings, spearheads and a pan and a brass bell [6.3] around. The sarcophagus, over 2 m long, 23 cm wide and with 12.7 cm thick walls, had been cut into two halves before burning and had a finger-tip decoration near the outer rim. It was covered by a concavo-convex lid. The other subpit had no iron objects but pottery in profusion. After the deposit of the funerary goods both the subpits were covered with heaped-up brown soil, whereafter the whole pit was finally packed with black soil mixed with laterite, over which again brown earth with laterite was rammed.

In Megalith III, the pit, 3-35 m in diameter, had over it a smaller stone circle, 1.82 m in diameter. The pit itself was 2.58 deep with no subpits lower down and was filled by rubble in the upper part and lamonite pebbles in the lower. The n.-s. sarcophagus was less than 1 m long, 60 cm wide and 3 cm deep inclusive of the legs. The accompanying pottery was not numerous. An iron tripod, 15 cm in diameter, lay to the e.

Megalith IV was cut diagonally by the water course which had destroyed its stone circle. About 1.5 m below the ground level was found with n.-s. orientation an eight-footed sarcophagus 1.7 m long, 38 cm wide and 39 cm high inclusive of the legs, ornamented with a finger-tip decoration round the border and the lid. Pottery, and iron sword fragment and part of an iron tripod were the grave goods.

The pottery from the megaliths can be classified as: (1) red polished ware, (2) black polished ware, (3) dull Black-and-red Ware [11.15.3] usually associated with megaliths, and (4) bright Black-and-red Ware, distinct from (3). The shapes were mostly similar to those found in the megaliths with a few special types. Though post-firing graffiti [20.1] occur on a large number of pots, the designs are limited in range. Of the iron objects mention may be made of swords and daggers, certain specialized objects like tripods and hoes or adze-like implements, an iron pan and a hollow chisel, two tubes of uncertain use and part of an iron trident.

The excavator dates the megaliths to between the 1st century and the 3rd-4th centuries A.D. but does not overrule an earlier dating.

Seshadri, M., 1960, *Report on the Jadigenahalli Megalithic Excavations, Mysore*.—A. BANERJI

Jadipur, Dt Allahabad. Late Stone Age (Mesolithic [4.5] and Megalithic [4.17.3] site.

IAR 1963-4.

Jafarabad¹, Dt Fatehpur. Site with coarse and slipped red wares besides old bricks.

IAR 1967-8.

Jafarabad², Dt Kheda. Chalcolithic [4.14.5] site.

IAR 1971-2.

Jafarpur (Gurdipur), Dt Bulandshahr. Early historical [4.18.1] site yielding coarse grey ware, Black-slipped

Ware [11.3] and plain red ware of Sunga-Kushan assemblage.

IAR 1965-6.

Jagadal, Dt Bijapur. Megalithic [4.17.8] site.

Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, p. 227.

Jagadevipalayam, Dt Dharmapuri. Site with dolmenoid cists [4.17.9].

IAR 1965-6.

Jagadhari, Dt Ambala. PGW [11.14] site.

Suraj Bhan, 1975, *Excavation at Mitathal and other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 125.

Jaganathpur, Dt Singhbhum. Site with Early and Middle Stone (Lower and Middle Palaeolithic [4.2.2, 3]) Age and microlithic (Mesolithic [4.5]) tools.

IAR 1962-3.

Jagannathpur¹, Dt Keonjhar. Site with Series II (Middle Palaeolithic [4.3]) tools including points, scrapers, borers, burins, blades, cores and flakes.

IAR 1958-9.

Jagannathpur², Dt Udaipur. Site with Series III (Mesolithic [4.5]) tools.

IAR 1959-60.

Jagatgram, Dt Dehra Dun. Excavation exposed remains of three sites where the king Śilavarman of the 3rd century A.D. performed *śvamedhas*. In addition to well-designed bricks in the orientation of the *śyena* (hawk or eagle) with spread wings, bricks from the first site bore Sanskrit inscriptions in the Brāhmī script of the 3rd century A.D., that the king left at the place the *citi* of his fourth horse sacrifice. The other two sites produced a number of inscribed bricks.

IAR 1953-4.

Jagatpur, Dt Kathua. Terrace 3 of the Ravi yielded pebble tools [4.2] and flakes.

IAR 1965-6.

Jagdal, Dt Bijapur. Neolithic [4.6.9]-Chalcolithic and Megalithic [4.14.8] site.

IAR 1965-6.

Jagmalera (29°33'; 74°44'), Dt Hissar. Site with Rang Mahal pottery.

IAR 1967-8.

Jagmal-no-More, Dt Kutch. Historical site. See AJMEL.

IAR 1965-6.

Jahangira, Dt Bhagalpur. The Jahangira area about 8 km to the w. of Sultanganj on the Sultanganj-Bhagalpur road yielded sherds of crude and fine varieties of black-and-red ware along with its associated types and NBPW [11.16].

IAR 1968-9.

Jahangirabad, Dt Kanpur. Site with black-and-red ware [4.13], PGW [11.14], NBPW [11.16], plain grey ware, Black-slipped Ware [11.13] and coarse red ware.

IAR 1967-8; 1968-9.

Jahangirpura, Dt Ujjain. Historical (details unspecified) site.

IAR 1971-2.

Jahazpur, Dt Bhilwara. Site on the Banas with Series I (Lower Palaeolithic [4.2]) tools.

IAR 1958-9.

Jaidak, (22°40'; 70°35'), Dt Jamnagar. Late Harappa [4.10] site corresponding to RANGPUR II B and II C.

AI, 18 & 19, 1963 & 1964, p. 205.

Jaimangalagarh, Dt Monghyr. Ruins of *stūpas* of mud bricks similar to those at LAURIYA-NANDANGARH.

IAR 1958-9.

Jainburubetta, Dt Nilgiri. Megalithic site with a dolmen surrounded by a stone circle [4.17.10].

Sewell, R., 1882, *Antiquarian Remains in the Madras Presidency*, Madras.

Jainer, Dt Saharanpur. Site with Harappa [11.3] Ware and Śūnga-Kushan and medieval wares.

IAR 1964-5.

Jainpur, Dt Belgaum. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3]) tools.

IAR 1963-4.

Jaipur, Dt Mayurbhanj. Site with neolithic [4.6.7] tools.

IAR 1958-9.

Jaisinghpur, Dt Gurgaon. PGW [11.14] and early historical [4.18.1] site.

Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.

Jaisinghpura, Dt Mathura. Situated 5 km from Mathura, the site was excavated in 1910-11 and yielded sculptural remains of the Kushan and Gupta periods.

ASI-AR, 1911-2.

Jaitana, Dt Dhule. Fragmentary fossil bones were obtained in association with microliths [4.5] from the yellowish silt. Tools of Series (Middle Palaeolithic [4.3]) were also found *in situ* in the underlying reddish-brown current-bedded gravel. Chalcolithic [4.14.7] habitation and burial sites were also noticed.

IAR 1959-60.

Jaitpur Jatoda, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1966-7.

Jajmau, Dt Kanpur. The antiquities included a few sherds or the PGW [11.14], a large quantity of the NBPW [11.16], iron implements, ivory bangles, dice, terracotta figurines, weights, etc.

IAR 1956-7; 1957-8; 1961-2.

Jakhanur, Dt Bijapur. Megalithic burials [4.17.8].

IAR 1965-6.

Jakhar, Dt Kangra. Lower Palaeolithic [4.2] site in the BANGANGA valley.

Mohapatra, G.C., 1966, in *Bull. Deccan College Res. Inst.*, pp. 221-37.

Jakhera, Dt Etah. The site also known as Kusak is situated on the left bank of the Kali Nadi. Pd I characterized by unpainted black-and-red ware [11.6.3] and Black-slipped Ware [11.13] and red ware and some burnished grey ware. A floor with burnt patches and port-holes and a few burnt mud clods with reed marks indicate wattle-and-daub construction. Pd II A repre-

sents an earlier stage of the PGW [11.24] and is marked by the continuation of the earlier pottery and introduction of a small quantity of painted pottery along with a few pieces of the PGW. A much richer material life than that of Pd I is reflected in the greater number and variety of antiquities. Pd II B represents the mature PGW culture marked by the fine variety of the Ware along with Black-slipped Ware and red and plain grey and black-and-red wares. The most significant feature of this Sub-Pd is that a part of the settlement now appears to have been circumscribed by a low mud embankment. Partly exposed floors with post-holes indicate a circular or oval and rectangular plan of the house/rooms. Other antiquities include: bangles, antimony rods [18.1], fish hooks [6.6] and a needle of copper; a hoe, sickle, spear-head, arrowhead, chopper, chisel, axe, nails and rods of iron; pottery discs and wheels; terracotta balls, beads, spindle whorls [6.25] gamesmen [6.7.2] and dabbers [16.11]; and arrowheads and points of various shapes and sizes of bone. Pd III is marked by the introduction of the NBPW [11.16] which overlaps with the PGW. It may be equated to ŚRĀVASTI Pd I.

IAR 1959-60. Sahi, M.D.N., 1978, in *Man & Environment*, 2, pp. 101-3.

Jakherdanga¹, Dt Birbhum. Site yielding blade industries.

IAR 1965-6.

Jakherdanga², Dt Burdwan. An extensive Chalcolithic [4.14.4] site at Eruar close to the bed of the Bhahmani yielding fragments of black-and-red ware and lustrous red ware similar to those found at PANDU RAJAR DHIBI and a few microlithic flakes and a small neolithic celt.

IAR 1972-3.

Jakkirai, Dt Bijapur. Site with microliths.

IAR 1962-3.

Jaklipada, Dt Dhule. Site with microliths.

IAR 1960-1.

Jaknur, Dt Bijapur. Megalithic [4.17.8] site.

Sundara, A., 1975, *Early Chamber Tombs of S. India*, Delhi p. 227.

Jal, Dt Rajkot. Site with Red Polished Ware [11.23].

IAR 1957-8.

Jalahalli, Dt Bangalore. Late Stone Age (Mesolithic [4.5]) and Megalithic [4.17.8] site

Gordon, D.H., 1950, in *AI*, 6, 1950, p. 70; 1958, *Prehistoric Background of Indian Culture*, Bombay, p. 17. Seshadri, M., 1956, *Stone-using Cultures of Pre- & Proto-historic Mysore*, London, pp. 31-3.

Jalai, See PACHMARHI.

Jalalabad, Dt Shahjahanpur. The site yielded grey ware, both plain as well as painted black-and-red ware [4.13], Black-slipped Ware [11.13] and associated red Ware. Sherds of NBPW [11.16] and associated wares and post-NBPW materials were also found; two terracotta sealings were recorded.

Misra, V.N., 1977, *Some Aspects of Indian Arch.*, Allahabad, pp. 123, 126.

Jalalpur¹, Dt Allahabad. Site with NBPW [11.16] and associated pottery.

IAR 1961-2.

Jalalpur², Dt Meerut. Site with grey ware and early historical pottery.

IAR 1968-9.

Jalar-no-timbo, Dt Banas-Kantha. Historical site (nature unspecified) near Deva.

IAR 1968-9.

Jalat, Dt Panch Mahals. Mesolithic [4.5] site along the Khan river.

IAR 1968-9.

Jalesar fort, Dt Etah. Site with PGW [11.14], red ware of the Sunga-Kushan period and medieval ware.

IAR 1966-7.

Jalgaon, Dt Jalgaon. Site with microliths (nature unspecified).

IAR 1962-3.

Jalhupur, Dt Varanasi. Site with Black-slipped Ware [11.13] and grey and red wares associated with NBPW [11.16].

IAR 1961-2.

Jalihai, Dt Bijapur. Lower Palaeolithic [4.2] site.

Karnataka Bharati, 9, 4, p. 20.

Jalka, Dt Dhule. Site with microliths (of unspecified character).

IAR 1959-60.

Jalkakhera, Dt Bilwara. Site with microliths (of unspecified character).

IAR 1958-9.

Jalkhedi, Dt Ambala. Site with PGW [11.16].

IAR 1964-5, Suraj Bhan, 1976, *Excavation at Mitthal and other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 23.

Jallapur, Dt Dharwar. Palaeolithic implements (of unspecified character) and Neolithic tools, probably of the Chalcolithic complex [4.14.8].

IAR 1958-9.

Jalna, Dt Aurangabad. Chalcolithic [4.14.6] site on the bank of the Kundalika, with tools of Series II (Middle Palaeolithic [4.3] microliths (of unspecified character) and black-painted red pottery.

IAR 1960-1.

Jalod, Dt Mandsaur. Specimens of Acheulian hand-axes, borers and cleavers [4.2] were picked up in a stream by the villages of Jalod and Chadod. There are also Chalcolithic [4.14.5] remains.

IAR 1959-60.

Jaloda, Dt Chittaurgarh. Middle and Late Stone Age (Middle and Mesolithic [4.2, 5]) site.

IAR 1963-4.

Jalodia, Dt Ujjain. Historical site (of unspecified nature).

IAR 1971-2.

Jalpuri, Dt Bijapur. Thick coarse grey ware with ribbon flakes of chert [6.15.2] of Chalcolithic affiliation [4.14.8].

IAR 1958-59.

Jalukhari, Dt Gauhati. A boat-shaped object of burnt

clay was exposed at a depth of about 1-2 m below the surface. It measured nearly 4 m in length and 92 cm in breadth and contained a large number of sherds some of them being part of huge storage jars. Similar remains were also exposed at a distance of about 33 m to the s.-w. of the site.

IAR 1967-8.

Jalvad-Khurd, Dt Dhule. Chalcolithic [4.14.6] burial remains.

IAR 1960-1.

Jamadbhad, Dt E. Nimar. Palaeolithic and microlithic tools, both of unspecified character.

IAR 1959-60.

Jamalgarh, **Jamalpurgarh**, **Jamalpurdiba** (25°15'; 86°29'), Dt Monghyr, about 200 m n.-w. of Jamalpur railway station. The *garh*, now a part of the town, is left without any distinctive features. The site is situated near the foot of the low jungle-covered Kharagpur hill with scraped faces of massive quartzite blocks at places, which forms an irregular triangular block extending from Jamalpur to Jamui, with numerous steep ridges ensuing from the low ground all around and a few patches of valleys of cultivable land. There are a number of hot springs of which the ones at Bhimbandh are well known. Many peaks of this range rise to a height of about 400 m or even more. These natural surroundings were favourable for the Palaeolithic [4.2-4] food-gatherers and Neolithic [4.6] agriculturists.

In 1926 two Neolithic celts, now in the Indian Museum, Calcutta, were found in the course of a tank digging. One of them, found 4-57 m below the ground level, has a sharp and round cutting edge with both sides of edge ground and is polished up to 2 cm. The other, picked up from 3-04 m below the ground level, is unfinished, with a slightly curved cutting edge. Broken at the top, it has a groove for hafting. Small patches of *kankar* (calcium carbonate) adhered to its surface. Both are made of fine-grained schistose phyllite.

Near Jamalgarh the rock is known as Kalipahari after a modern Kālī temple, with a black basalt medieval Kālī statue.

Jour. Asiatic Soc. Bengal, 22, 1926, p. 135. *Monghyr District Gazetteer*. Patil, D.R., 1963, *Antiquarian Remains in Bihar*, Patna—S.R. ROY

Jamalpur¹, Dt Hissar. Jamalpur-1 is an early historical [4.18.1] site and Jamalpur-2 has PGW [11.14], Black-slipped Ware [11.13] and early historical [4.18.1] material.

Silak Ram, 1972, unpublished thesis, Kurukshetra University.

Jamalpur², Dt Monghyr. Site yielding two Neolithic [4.6.3] celts. The hill has Early and Middle (Lower and Middle Palaeolithic [4.2-3]) tools comprising handaxes, cleavers, flakes, points, blades, etc. (Same as JAMALGARH?) See SITAKUND RIVULET.

Jour. & Proc. Asiatic Soc. of Bengal, 1926, p. 235. IAR 1960-1; 1961-2.

Jamalpurgarh, Jamalpurdiba, See JAMALGARH.

Jam Ambardi, Dt Rajkot. Site with Harappa Ware [11.3].

IAR 1957-8.

Jamarakoliyampatti, Dt. Dharmapuri. Megalithic sites with dolmens [4.17.9].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Jamatoli, Dt Ranchi. Late Stone Age (Mesolithic [4.5]) site.

IAR 1965-6.

Jambhali, Dt Ahmadnagar. Series II (Middle Palaeolithic [4.3]) tools and microliths (Mesolithic [4.5]).

IAR 1960-1.

Jambhlipada, Dt Dhule. Series II (Middle Palaeolithic [4.3]) tools and microliths were collected from the Magala-nala.

IAR 1959-60.

Jambira hills, Dt Manbhum. A Neolithic [4.6.5] site was found at the base of Jambira hills near Nundih station.

Science & Culture, 17, 1951.

Jambodai, Dt S. Arcot. Megalithic site with dolmens [4.17.9].

Jambu Dwip, Dt Hoshangabad. Excavation revealed microliths and potsherds in the painted rock-shelters. See PACHMARHI.

Wakankar, V.S., & Brooks, R.R.R., 1976, *Stone Age Painting in India*, Bombay.

Jambuladinne, Dt Kurnool. Site with Rouletted [11.21] and Russet-coated Painted [11.22] Wares.

IAR 1963-4.

Jambuldinni hill, Dt Anantapur. Neolithic [4.6.8] site yielding celts, scrapers, flakes, etc.

Foote, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Jambuni. See 4.14.4.

Jamdara, Dt Bhind. Site with black-and-red ware and NBPW [11.16].

IAR 1959-60.

Jamgaon, Dt Jabalpur. Conch-shells embedded in conglomerate were discovered in association with Series I and II (Lower and Middle Palaeolithic [4.2, 3]) tools.

IAR 1958-9.

Jami, Dt Visakhapatnam. Neolithic [4.6.8], Chalcolithic [4.14.7] and early historical [4.18.10] site, with an early Buddhist site at the top of a low hill overlooking the river Gostani.

Jour. Andhra Hist. Res. Soc., 35, pp. 371-5. IAR 1955-6.

Jam Kandorna, Dt Rajkot. Sites with Red Polished Ware [11.23] were found. Harappa sherds [11.3] were also collected.

IAR 1956-7; 1957-8.

Jamki, Dt Dhule. Early and Middle Age (Lower and Middle Palaeolithic [4.2, 3]) site.

IAR 1965-6.

Jamalanapada, Dt Surat. Lower [4.2] and Middle Palaeolithic [4.3] and Mesolithic [4.5] site.

IAR 1967-8.

Jamli, Dt Indore. Mesolithic [4.5] site.

IAR 1970-1.

Jammal, Dt Kangra. Unifacial choppers and flakes [4.2].

IAR 1966-7.

Jammanahalli, Dt Dharmapuri. Megalithic cairn circles [4.17.9].

IAR 1970-1.

Jamoi, Dt Shahdol. Middle and Late Stone Age (Middle Palaeolithic and Mesolithic [4.3, 5]) tools.

IAR 1961-2.

Jampada, Dt Kalahandi. Site with microliths (of unspecified nature).

IAR 1963-4.

Jamshedpur, Dt Singhbhum. Neolithic [4.6.5] site situated near the confluence of the Subarnarekha and the Kharkai within the town of Jamshedpur.

IAR 1972-3.

Jamua, Dt Allahabad. Neolithic [4.6.3] site.

IAR 1969-70.

Jamuha, Dt Bhind. NBPW [11.16] and black-and-red ware [4.13].

IAR 1958-9.

Jamunai hill, Dt Panna. Site with microliths (of unspecified nature) near the hill of Pahari-Khera.

IAR 1957-8.

Jamunia, Dt Mirzapur. Upper Palaeolithic [4.4] site yielding blades, points, scrapers and burins.

IAR 1970-1.

Jamunipur. See GANGA VALLEY.

Jamwali, Dt Rajkot. Site with Red Polished Ware [11.23].

IAR 1957-8.

Janapav, Dt Indore. Site with microliths (of unspecified nature).

IAR 1958-9.

Jandli, Dt Hissar. Early historical site [4.18.1].

Silak Ram, 1972, unpublished thesis, Kurukshetra Univ.

Jangad, Dt Dharwar. Site with Megalithic stone circles [4.17.8].

IAR 1960-1.

Jangalapadu, Dt Nellore. Lower [4.2] and Middle Palaeolithic [4.3] site in the Venkatagirieru river valley.

IAR 1965-6.

Jangalapalli (13°45'; 79°36'), Dt Chittoor. Early Stone Age (Lower Palaeolithic [4.2]) site,

IAR 1967-8.

Jangalavadi, Dt Dharmapuri. Megalithic sites with dolmens [4.17.9].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Jangal-mahal. See 4.17.3.

Janganamahalli, Dt Kolar. Site with Megalithic stone circles [4.17.8].

IAR 1972-3.

Jangaon, Dt Karimnagar. Middle Palaeolithic [4.3] artefacts in association with a few fossilized bones of *Bos frontalis*.

Gururaja Rao, B.K., ed., 1978, *Decade of Arch. Studies in s. India*, Dharwad, p. 48.

Jangipore, Dt Murshidabad. An extensive site by the side of the ancient bed of the Bhagirathi yielding two gold coins of Narsimhagupta Balāditya, pottery such as thick storage jars, spouted vessels, decorative pan-handles and lids and pre-Mughal glazed ware.

IAR 1971-2.

Jangra, Dt Sundargarh. Site with Series I (Lower Palaeolithic [4.2]) tools.

IAR 1957-8.

Jani, Dt Morena. Lower and Middle Palaeolithic tools [4.2, 3] were collected from the section of the river Chambal.

IAR 1972-3.

Janipur, Dt Saharanpur. Ochre-coloured Ware [11.5] and Śunga-Kushan and medieval wares.

IAR 1964-5.

Jankal. See JYANKAL.

Jannod, Dt Mandsaur. Tools of Series I (Lower Palaeolithic [4.2]), mainly bifacial handaxes and cleavers, were found in the lower levels and handaxes, cleavers, discoids, ovates and a hollow scraper-cum-cleaver *in situ* in the upper gravel. The third gravel, a loose sand-deposition, yielded tools of Series II (Middle Palaeolithic [4.3]) at a place 5 km down the stream from Jannod. Over 1 km down this site tools of Series II were found in the loose gravel in the bed of the stream. Some cleavers and pebble tools, mostly bifacial, were also collected.

IAR 1959-60.

Janpat, Dt Bulandshahr. Early historical [4.18.1] and medieval site.

IAR 1963-4.

Janso-ki-Marai, Dt Varanasi. Black-and-red Ware [4.13] and NBPW [11.16].

IAR 1962-3.

Janumpiri, Dt Ranchi. A small polished stone celt [4.6.5] was found.

Roy, S.C., 1916, in *Jour. Bihar & Orissa Res. Soc.*, 2, p. 68.

Januthar, Dt Bharatpur. PGW [11.14] and red ware.

IAR 1965-6.

Jaora, Dt Ratlam. Site with Kayatha Ware [11.7] and microliths.

IAR 1956-7. Wakankar, V.S., 1976, in *Arch. Congress & Seminar*, 1972, Kurukshetra, p. 56.

Jarakhi Keriya, Dt Bhavnagar. Early historical site.

IAR 1971-2.

Jarara, Dt Morena. Late Stone Age (Mesolithic [4.5]) site yielding microliths.

IAR 1968-9.

Jarauthi, Dt Meerut, PGW [11.14] site.

IAR 1966-7.

Jargo, Dt Purulia. Site with Middle Stone Age (Middle Palaeolithic [4.3]) tools and microliths.

IAR 1963-4.

Jarha, Dt Mirzapur. Site with cairn circles and dolmenoid cists [4.17.3].

IAR 1962-3.

Jasdan, Dt Rajkot. Stone Age (unspecified) site.

IAR 1965-6.

Jashpur, Dt Birbhum. Microliths (perhaps Chalcolithic [4.14.4]) and painted black-and-red and red wares.

IAR 1962-3.

Jasikir, Dt Santal Parganas. Middle Stone Age (Middle Palaeolithic [4.3]) tools were found at the mouth of the river Kotania.

IAR 1963-4.

Jasuri, Dt Varanasi. Early historical black-and-red [4.13] ware site.

IAR 1962-3.

Jat, Dt Bijnor. PGW [11.14] site.

IAR 1959-60.

Jatakakambe, Dt Nilgiri. Megalithic [4.17.10] site.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras, p. 228.

Jatap, Dt Ahmadnagar. Microliths of the Chalcolithic period [4.14.6].

IAR 1959-60.

Jategaon, Dt Ahmadnagar. Microliths possibly of Chalcolithic [4.14.6] association and early historical pottery.

IAR 1960-1.

Jatkara, Dt Chhatarpur. Extensive site yielding Early Stone Age (Lower Palaeolithic [4.2]) tools, Levalloisian flakes and various scrapers belonging to the Middle Stone (Middle Palaeolithic [4.3]) Age, Late Stone Age (Mesolithic [4.3]) artefacts, some neolithic axes and adzes, a few fragments of sling balls and mace-heads.

IAR 1965-6.

Jatwara, Dt Muzaffarnagar. Grey ware associated with NBPW [11.16], red ware of Śunga-Kushan assemblage and medieval ware.

IAR 1962-3.

Jaugada, Dt Ganjam, a fortified township on the bank of the Rishikulya, identified with Samāpā, to the *mahāmātras* of which the first Separate Rock-edict of Aśoka is addressed, the edict-bearing boulder lying within the fortified area. The site was excavated by D. Mitra of the ASI in 1956-7 (IAR 1956-7, p. 30). On the natural soil was a sandy layer of flimsy occupational debris with sherds of fine black-and-red ware [11.6], over which was built the first defensive wall with a basal width of over 21 m and an extant height 4.4 m, its material derived from a ditch cut into the sandy layer. In the core of the wall were stray sherds of the same nature as in the sandy layer. In the next phase a thick deposit of clay was laid on the existing top of the wall, and later on was erected on the

inner side a 60 cm high wall of rubble and stone clips with large boulders on the top. Both the faces of the wall and its top were covered with varied subsequent deposits, one of which yielded a Puri-Kushan coin. The defensive wall continued to be heightened but its top was largely eroded.

In the habitation area Pd I represented an iron-using culture, with ordinary dull-red ware with or without slip, fine and well-burnt black-and-red ware in the shapes of the dish and bowl and polished red ware. Beads of shell, bone and stone, including unfinished ones, were plentiful. Post-holes and patches of floors of rammed gravel or burnt earth were encountered.

Brick and stone structures were scantily encountered in Pd II. The pottery of the Pd was an underfired red ware with incised and applied decorations. Vessels with knobs at the base, also found in Pd I but now of degenerate fabric, formed part of the ceramic contents. The other finds were beads, copper and iron objects, a punch-marked coin [3.1] and Puri-Kushan coins.

A Neolithic [4.6.7] substratum of the area is suggested by the find of a stone celt in the sandy layer overlying the natural soil and a few of them on the surface—all of oblong section. A Neolithic culture was perhaps supplanted by an Iron Age culture, evidently in pre-Christian times.

—A. GHOSH

Jauharabad, Dt Gorakhpur. Site with NBPW [11.16].

IAR 1963-4.

Jauharganj, Dt Ghazipur. Site with NBPW [11.16] and early historical pottery.

IAR 1964-5.

Jaunra, Dt Shahjahanpur. Site with grey sherds mostly plain but of PGW [11.14] fabric and shapes.

IAR 1965-6.

Jaura-Chhitran, Dt Gurdaspur. Early historical remains. See ACHAL-SAHEB.

IAR 1961-2.

Javadi hills, Dt S. Arcot. Site with pointed-butt polished stone axes [4.6.10].

ASI—AR 1930-4.

Javale, Dt Ahmadnagar. Site with tools of Series II (Middle Palaeolithic [4.3]) and microliths (of unspecified nature) and sherds of thick grey ware.

IAR 1960-1.

Jawad, Dt Mandasaur. Pebble tools and Acheulian tools [4.2] were found in the neighbourhood on the banks of the Gambhiri and its tributary nullah, as also black-and-red ware.

IAR 1956-7; 1968-9.

Jawale, Dt Ahmadnagar. Chalcolithic [4.14.6] site.

IAR 1960-1.

Jawali (17°25'; 76°32'), Dt Gulbarga. Middle Stone Age (Middle Palaeolithic [4.3]) and early historical [4.18.11] site in the Amarja valley.

Nagaraju, S., 1971, in *Prof. K.A. Nilakanta Sastri Felicitation Vol.*, Madras, pp. 218-23.

Jawanpura, Dt Panch Mahals. Microlithic site presumably of Chalcolithic [4.14] affiliation on the bank of the river Deo between Champaner and Desar.

IAR 1959-60.

Jayadevi-Udar, Dt Anantanag. Neolithic [4.6.1] assemblage similar to that revealed at BURZAHOM.

IAR 1962-3.

Jayakawadi, Dt Aurangabad. Middle Palaeolithic [4.3] site at the Dam Project site.

IAR 1967-8.

Jayal. See 9.2.

Jayamangla, Dt Kolar. Megalithic site with Black-and-red ware and red ware.

IAR 1972-3.

Jaychandi hill, Dt Purulia. Rolled and patinated cleaver of quartzite, rolled and sturdy Abbevillian handaxe of gneiss along with a few unstandardized implements in quartzite [4.2].

IAR 1966-7.

Jaypanda, Dt Bankura. Microliths (of unspecified affiliation).

IAR 1960-1.

Jedigenhalli. See JADIGENAHALLI.

Jehra, Dt Bulandshahr. Site with PGW [11.14] and plain grey ware.

IAR 1959-60.

Jengmural, Dt Bijapur. Microliths (of unspecified nature).

IAR 1961-2.

Jergunti, Dt Raichur. Ash-mound [14.3]. On the surface are found chert flakes.

Allchin, F.R., 1963, *Neolithic Cattle-keepers of s. India*, Cambridge, p. 60.

Jethal, Dt Indore. Mesolithic [4.5] site.

IAR 1970-1.

Jethian, Dt Gaya. In the Jethian valley, about 12.5 km to the e. of Rajgir, exploration in the Jamunia nullah to the west of Budhiyana hill yielded Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3] tools. At Jethian itself, among other remains, mostly Buddhist, a 13 m long drain was noticed on the w. periphery of the hill. The large size of the stones are reminiscent of the fortification walls of RAJGIR.

IAR 1960-1; 1967-8.

Jetpur. See NAVA VAGHPUR.

Jetsar, Dt Ganganagar. Site with PGW [11.14], impressed pottery, Rang Mahal Ware [11.24] and shell bangles. See SARASVATI VALLEY.

Unpublished.

Jewargi (B.K.), Dt Gulbarga. Megalithic [4.17.8] and early historical [4.18.11] site. Some stone circles have non-functional passages. Cairn stone circles and round oblong barrows also occur.

Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 57-61.

- Jeyannaur**, Dt Dharmapuri. Megalithic cists [4.17.9].
IAR 1964-5.
- Jhalai**, Dt Hoshangabad. Rock-shelters [13].
Madhya Pradesh ki Rupa-rekha, p. 40.
- Jhalor-no-Ghod**, Dt Banas-Kantha. Late red ware, sculptures, coins, beads, etc.
IAR 1964-5.
- Jhalrapatan**, Dt Jhalawar. Microlithic tools (of unspecified nature) were found near Jhalawar.
IAR 1955-6.
- Jhamela**, Dt Chanda. Site with Early Stone Age (Lower Palaeolithic [4.2]) tools.
IAR 1961-2.
- Jhamnamajra**, Dt Saharanpur. PGW [11.14] site.
IAR 1965-6.
- Jamnia**, Dt Bharuch. Middle and Late Stone Age (Middle Palaeolithic and Mesolithic [4.3.5]) site.
IAR 1969-70.
- Jhampa**, Dt Bharuch. Late Stone Age (Mesolithic [4.5]) site.
IAR 1969-70.
- Jhandewala**, Dt Ganganagar. PGW [11.14], Rang Mahal Ware [11.24], pottery mould, fragmentary dabber [16.11] and shell bangles. See SARASVATĪ VALLEY.
Unpublished.
- Jhandewala-Tibba**, Dt Ganganagar. PGW [11.14], Rang Mahal Ware [11.24], carnelian beads, shell bangles and chert blades. See SARASVATĪ VALLEY.
Unpublished.
- Jhandia**, Dt Mirzapur. Upper Palaeolithic [4.4] sites yielding blades, points, scrapers and burins. At Jhandia Pahari were found Middle Palaeolithic [4.3] tools.
IAR 1970-1.
- Jhangar** (23°19'; 70°05'), Dt Kutch. Extensive low mound yielding the Harappa red, buff and 'reserved slip' wares [11.3], cores, flakes, some of them retouched and used as scrapers, and short parallel-sided blades. Coarse red ware including the painted variety akin to the Rang Mahal Ware [11.24] was also found.
IAR 1965-6. Chakrabarti, D.K., 1975-6, in *Purātattva*, 8, p. 159.
- Jhangirabad**, Dt Kanpur. Site with PGW [11.14], NBPW [11.16] and black-and-red ware.
IAR 1965-6.
- Jhanjhari**, Dt Karnal. Late Harappa [4.10] site comparable with MITATHAL II B. See YAMUNA RIVER.
Suraj Bhan, 1976, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 125.
- Jhanjmer**, Dt Rajkot. Harappa [11.3], Prabhas [11.8] and Red Polished [11.23] Wares together with microliths comprising parallel-sided blades, sometimes showing the crested ridge, and fluted cores [16.15.2].
IAR 1957-8.
- Jhankharia**, Dt Panch Mahals. See CHAMPANER.
Mehta, R.N., 1977, *Prehistoric Champaner*, Vadodara.
- Jhanna**, Dt Panna. Pointed-butt polished stone axes.
Brown, J.C., 1917, *Catalogue of the Prehistoric Antiquities in the Indian Museum*, Simla.
- Jhansighat**. See NARMADA VALLEY.
- Jhantipahari**, Dt Bankura. Microliths (of unspecified nature).
IAR 1959-60.
- Jharala-pada**, Dt Dhule. Series II (Middle Palaeolithic [4.3]) tools. (Same as following?).
IAR 1959-60.
- Jharalipada**, Dt Dhule. Late Stone Age (Mesolithic [4.5]) tools. (Same as preceding?).
IAR 1960-1.
- Jharda¹**, Dt Mandsaur. Chalcolithic [4.14.5] site yielding Kayatha Ware [11.7], white-painted black-and-red ware of Ahar² fabric [11.6.2], black-painted red ware of Malwa fabric [11.10], punch-marked and cast copper coins [3.1] and sherds of the NBPW [11.16].
IAR 1969-70. Wakankar, V.S., 1976, in *Arch. Congress & Seminar*, 1972, Kurukshetra, p. 56.
- Jharda²**, Dt Ujjain. Chalcolithic [4.14.5] site.
IAR 1971-2.
- Jhargram**, Dt Bankura. Microliths (of unspecified nature).
IAR 1960-1.
- Jhari-Mangrul**, Dt Chanda. Site on the Bhadga nullah in the Wainganga basin yielding a succession of lithic industries. In the grave bed were found bifacial pebble choppers and Abbevillio-Acheulian handaxes and cleavers [4.2]. On the surface of the topmost gravel were picked up tools of Series II (Middle Palaeolithic [4.3]) as well as of the blade-and-burin industry. Microliths [4.5] were also obtained.
IAR 1960-1.
- Jhari Pahar**, Dt Palamau. Middle Stone Age (Middle Palaeolithic [4.3]) site.
IAR 1970-1.
- Jharna-ki-Pahari**, Dt Allahabad. Late Stone Age (Mesolithic [4.5]) site.
IAR 1963-4.
- Jhauan**, Dt Gorakhpur. Site with NBPW [11.16].
IAR 1963-4.
- Jhekhada**, Dt Banas-Kantha. Harappa [4.9] site.
IAR 1971-2.
- Jhikri**, Dt Rajkot. Site with Harappa pottery [11.3].
IAR 1959-60.
- Jhilimili**, Dt Bankura. Microlithic site yielding scrapers, blades, flakes and cores (of Mesolithic [4.5] affiliation?).
IAR 1968-9.
- Jhiliparia**, Dt Hoshangabad. Flake and blade tools (of unspecified affiliation).
IAR 1960-1.
- Jhinjar**, Dt Bhiwani. Late Harappa [4.10] site comparable with MITATHAL II B.
Suraj Bhan, 1975, *Excavation at Mitathal & other Exploration in the Sutlej-Yamuna Divide*, p. 126.
- Jhinjhana**, Dt Muzaffarnagar. Site with PGW [11.14] and OCW [11.15].
IAR 1962-3.
- Jhirapani**, Dt Sundargarh. Middle Palaeolithic [4.3]

site.

IAR 1958-9.

Jhiri, Dt Ballia. Late Stone Age (Mesolithic [4.5]) site on the left bank of the Tons, 3 km upstream from its confluence with the Ganga.

IAR 1970-1.

Jhol, Dt Kutch. Historical site. See AJMEL.

IAR 1965-6.

Jhonjh, Dt Jabalpur. Microliths (of unspecified nature).

IAR 1959-60.

Jhuran-1 & -2, Dt Kutch. Historical sites. See AJMEL.

IAR 1965-6.

Jhusi (25°29'; 81°55'), Dt Allahabad. Ancient Pratiṣṭhānapura opposite Allahabad, with a largely destroyed habitation site. Traces of moat and a defence wall were noticed and sherds of the NBPW [11.16] were collected together with terracotta figurines assignable to the Śunga period.

AI, 1, 1946, p. 55. IAR 1961-2.

Jibdharpur, Dt Birbhum. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2.3]) tools and microliths (of an unspecified nature).

IAR 1963-4.

Jigeri. See VANDHAGOLA-JIGERI.

Jilada, Dt Bhavnagar. Red Polished Ware [11.23] site in the Shetrunji valley.

IAR 1960-1.

Jilia, Dt Mahesana. Site with coarse red ware and medieval glazed ware.

IAR 1964-5.

Jilugubanda Dibba, Dt Srikakulam. Early historical [4.18.10] site.

IAR 1971-2.

Jind, Dt Jind. Jind-1 yielded pre-Harappa [4.8] and Harappa [4.9] material, whereas Jind-2 had PGW [11.14].

IAR 1966-7. Suraj Bhan, 1975, *Excavation at Mitathal & other Exploration in the Sutlej-Yamuna Divide*, Kurukshetra, p. 124.

Jindaur, Dt Lucknow. Early historical site yielding NBPW [11.16] and later ware.

IAR 1969-70.

Jindhar, Dt Ahmadabad. Microlith-bearing [4.5] site located on a low sand-dune situated a little away from the river Meshwa and its tributaries. The microliths comprised finished tools, cores, nodules and fragments of raw material. Besides microlithic material bone fragments including teeth of cattle were obtained. The horse-hoof core scrapers end scrapers and discoidal cores were interesting types in the collection, fluted blade-cores, crescents and triangles being the commonest. There were a few thick pen-knife blades finely retouched on the convex side. Points were rare and showed simple or limited retouch.

IAR 1971-2.

Jinral, Dt Belgaum. Megalithic [4.17.8] site.

IAR 1966-7.

Jirankalgi, Dt Bijapur. Neolithic [4.6.9] tools, mostly axes made on fine-grained trap, were found. The site also yielded painted black-on-red pottery characteristic of the Chalcolithic cultures of the Deccan and a thick grey ware similar to that found at BRAHMAGIRI and BAHAL in association with microliths.

IAR 1957-8.

Jirhal Kalgudi, Dt Raichur. Megalithic site with pit circles [4.17.8].

Karnataka Bharati, 6, pp. 64-75.

Jirmadapur, Dt Dharwar. Early historical [4.18.11] site. A few handaxes of the Early Stone (Lower Palaeolithic [4.2]) Age were picked up. See ADERKATTI.

IAR 1961-2.

Jitgadh, Dt Bhavnagar. Middle and Late Stone Age (Middle Palaeolithic and Mesolithic [4.3.5]) site.

IAR 1969-70.

Jivani, Dt Bhavnagar. Site in the Kalubhar valley with Harappa Ware [11.3] and coarse corrugated wares.

IAR 1960-1.

Jivani-no-dhoro (21°50'; 71°45'), Dt Bhavnagar. Lustrous Red Ware [11.19] corresponding to RANGPUR II C and III.

AI, 18 & 19, 1962 & 1963, p. 205.

Jiwangarh, Dt Dehra Dun. Small-scale excavation revealed a brick platform raised over a rubble soling. It was built of re-used bricks of the earlier period datable to 1st-2nd century. The platform was probably constructed in medieval times.

IAR 1972-3.

Jiwankhera, Dt Jind. Late Harappa [11.4] site comparable with MITATHAL II B.

Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 125.

Jiwarji, Dt Gulbarga. Site with port-holed cists [4.17.8].

Jour. Bombay Branch of the Asiatic Soc., 3, 1851.

Joashia, Dt Bhilwara. Site with black-and-red ware. See KADUKOTA.

IAR 1957-8.

Jobala-nes-no-timbo, Dt Ahmadabad. Harappa [4.9] site.

IAR 1966-7.

Jodholi, Dt Chanda. Site with Megalithic stone circles [4.17.6].

IAR 1962-3.

Jodhpur, Dt Rajkot. Site with Harappa Ware [11.3].

IAR 1957-8.

Jodhpura (27°31'; 76°5'), Dt Jaipur, on the right bank of the Sabi, the mound here, alternatively known as Ghartool Ghat, excavated by the Rajasthan Dept of Arch. under R.C. Agrawala and his colleagues in 1972-3 (IAR 1958-9, p. 74; 1972-3, p. 29). Excavation in three trenches has revealed five Pds.

Pd I. This is characterized by the occurrence of the OCW [4.12] in the lowest occupational deposit, 1 to 1.30 m, composed of yellowish earth mixed with *kankar*. The

shapes in the ware are the dish, bowl, vase, knobbed lid and dish-on-stand, often with a thick slip. The decorations include incised designs such as triangular notches between parallel lines, wavy lines and rectangular forms. The pottery is orange to deep-red in colour and is wheel-turned. It does not show rolled edges, porous and powdery surface and ill-firing as the OCW sherds from HASTINĀPURA, BISAULI, RAJPUR PARSU, etc., where these characteristics are believed to be the result of the sherds lying in a water-logged condition for a long time (Lal, 1968, pp. 857-63). Nor does the deposit containing them show any traces of flood or water-logging. Terracotta and stone beads and bits of copper of indeterminate shapes are the other objects of the Pd. Two ^{14}C dates are available— 2230 ± 180 and 2530 ± 160 —both indicative of a very early beginning of the OCW in the region.

Pd II. The pottery of this Pd is predominantly the black-and-red ware [11.6.3] resembling that of NOH but having no affinity with that of AHAR². A floor of mud lumps has been found, as also a bone spike.

Pd III. While the black-and-red ware continues to be the principal pottery, the PGW [11.14] makes its advent. Iron implements, terracotta *ghata*-shaped beads, bone spikes and sockets and stone beads are the associated finds.

Pd IV. The NBPW [11.16] and its associated red ware appear on the scene. The other finds are iron arrow-heads and nails, shell bangles, a terracotta humped bull and a stone bead.

Pd V. This is marked by Śūṅga and Kushan pottery like the bowl, lid-cum-bowl, lipped bowl with small spouts, with *tri-ratna* and *svastika* stamps. Iron objects, a *ghata*-shaped terracotta bead, a stone bead and a copper coin have also been found.

Lal, B.B., 1968, in *American Anthropologist*, 170.—A. GHOSH }
Joera, Dt Udaipur. Microliths (of unspecified nature). black-and-red ware [11.6.2] and associated pottery.
 IAR 1956-7.

Joga, Dt Bellary. Lower Palaeolithic [4.2] site.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Jogadaha, Dt Mirzapur. On the river Son, 80 km from Hanumana, on the Hanumana-Baharia road near the Jogadaha bridge, the following sequence was noticed: (i) cemented gravel in eroded condition which yielded a pebble tool [4.2]; (ii) clayey deposit yielding tools of the Middle Stone (Middle Palaeolithic [4.3] Age); (iii) uncemented gravel yielding tools of the Upper Palaeolithic [4.4] blade industry; and (iv) clay deposit yielding Late Stone Age tools (Mesolithic [4.5]). Microliths were also found near Jogadaha bridge on the Son.
 IAR 1968-9.

Jogi-Ason-Chak-1, Dt Ganganagar. Pre-Harappa [11.2], Harappa [11.3], early historical and medieval

wares and coins.

IAR 1972-3, p. 61.

Joglipada, Dt Dhule. Palaeolithic [4.2] tools and microliths (of unspecified nature).

IAR 1958-9.

Jogna Khera, Dt Kurukshetra. Late Harappa [11.4] and PGW [11.14] site.

Kurukshetra Res. Jour. (Arts & Humanities), 10, 1976, pp. 28-9.

Joharganj-1 and -2, Dt Ghazipur. Site yielding the black slipped ware of the RAJGHAT type and black-and-red ware. Joharganj-1 yielded historical remains.

IAR 1962-3.

Johrapuram, Dt Kurnool. Late Stone Age (Mesolithic [4.5]) site.

IAR 1964-5.

Jokha ($21^{\circ}10'$; $73^{\circ}07'$), Dt Surat, a small village in Kamrej Taluka, the mound known as Gabhan lying at a distance of about 200 m to the n. of the village. The mound was excavated by the writer in association with others. The stratigraphy in three out of the six excavated trenches was fairly clear indicating the existence of three Pds.

Pd I (c. 1500 to 1000 B.C.). The deposit belongs to the Chalcolithic culture [4.14.6], with red ware, both plain and painted, buff ware and fluted cores, lunates, blades, trapezes, points, scrapers, etc. A core with a flake taken out of it is significant. Hammer-stones and polished stone tools like chisel are also present. Copper is represented by celt-like objects and bangles. Debris of burnt pieces of walls and patches of floorings have been noted.

Pd II (c. 500 B.C. to the beginning of the Christian era). Fragmentary and weathered pottery of Pd I along with new material like black-and-red, plain red, burnished red and other wares of the historical period and bone points, stoppers, discs, beads of carnelian, steatite, garnet, agate and chert, ear studs of lead, crystal, black glass and terracotta and bone points and pendants has been obtained.

Pd III (Medieval). Medieval pottery such as plain red burnished, red and plain black wares are obtained from the mound but tractors for deep ploughing have mixed up the material with that from the lower strata and only the existence of a medieval occupation can be known.

Mehta, R.N., Chowdhary, S.N., & Hegde, K.T.M., 1971, *Excavation at Jokha, Vadodara*.—R.N. MEHTA

Jonnagiri, Dt Kurnool. Site with Megalithic Black-and-red Ware [11.15.3].

IAR 1957-8.

Jora, Dt Kutch. Site with pottery reminiscent of the RANG MAHAL Ware [11.24].

AI, 18 & 19, 1962 & 1963, p. 187.

Jorasi-Khurd, Dt Kurukshetra. Site with PGW [11.14].

IAR 1960-1. Suraj Bhan, 1975, *Excavation at Muathal & other Exploration in the Sutlej-Yamuna Divide*, Kurukshetra, p. 124.

Jorma, Dt Ujjain. Early historical [4.18.7] site.

IAR 1971-2.

Jorwan river, Dt Panch Mahals. Early and Middle Stone (Lower and Middle Palaeolithic [4.2.3]) tools were obtained along the river Jorwan.

IAR 1969-70.

Jorwe (19°33'; 74°17'), Dt Ahmadnagar, a small village on the n. bank of the Pravara 8 km due e. of Sangamner. The site was excavated in 1950-1 by the Deccan College Research Inst. under H.D. Sankalia. The excavation revealed it to be a single-culture site of the Deccan Chalcolithic [4.14.6] complex. Owing to the limited nature of the dig, the cultural equipment was scanty. Predominant was the painted black-on-red pottery, identified here for the first time and hence designated as the Jorwe Ware [11.11]. The pottery is wheel-made, slipped and painted in black, the designs being mainly geometric. The shapes are utilitarian and comprise: the carinated bowl with rounded base; bowl with inturned sides; bowl with flaring or vertical sides; shouldered, globular jar; funnel-necked, wide-mouthed carinated vessel with a funnel-spout; cup; shallow dish; small basin; and lid. Associated with this are decorated and plain wares. Certain shapes are unique, e.g. rimless bowl with a funnel-spout, the lid-cum-dish and the tiered pot or ring-stand. Some bowls and carinated jars have painted and scratched graffiti [20.1]. Other antiquities include a bead of chalcedony, six axes of copper and a bangle and microliths including flakes, cores, blades, lunates, obliquely retouched blades and parallel-sided blades.

No ¹⁴C dates are available for the site but on the basis of relative chronology it is said to be a contemporary of NASIK Pd I.

Sankalia, H.D., & Deo, S.B., 1955, *Report on the Excavations at Nasik & Jorwe 1950-51*, Poona.—H.P.RAY

Jukur, Dt Raichur. Megalithic [4.17.8] site with cairn stone circles.

AR Hyderabad Dept of Arch., 1933-4, p. 7.

Junagadh, Dt Junagadh. Acheulian tools [4.2] were discovered in a pre-miliolite [9.7] gravel near the place. Acheulian handaxes were also collected from a well

section below the miliolite at Adi-Chadi-No-Van. An earthen bund which acted as a dam across the Suvar-narekha river was located. It seems to represent the dam of the lake Sudaršana mentioned in the Junagadh inscription of Rudradāman and Skandagupta. See 16.1. Traces of an early historical [4.18.2] settlement were found. Objects of the second half of the 4th century were found in the course of the removal of a 1 m thick deposit from the top of the Uparkot caves.

IAR 1956-7; 1958-9; 1967-8. Agrawal, D.P., & Pant, K.C., 1979, in *Man & Environment*, 3, p. 7.

Juna-Ghod, Dt Banas-Kantha. Site with painted red and medieval glazed wares.

IAR 1964-5.

Junapathgadh, Dt Kutch. Early historical [4.18.2] site.

IAR 1969-70.

Juni-Andhi, Dt Bharuch. Site with Red Polished Ware [11.23].

IAR 1957-8.

Juni-Lakhanta, Dt Bhavnagar. Early historical [4.18.2] site.

IAR 1971-2.

Junmohida, Dt Dhule. Upper Palaeolithic [4.4] tools.

IAR 1960-1.

Junnar, Dt Pune. Pieces of Roman amphorae [11.19] were found.

IAR 1957-8.

Junona, Dt Chanda. An old tank of considerable dimensions with a masonry embankment and an elaborate system of underground channels was found.

IAR 1958-9.

Jurdag, Dt Ranchi. A Palaeolithic implement (of unspecified nature) of quartzite was found.

Roy, S.C., 1918, in *Jour. Bihar & Orissa Res. Soc.*, 3, p. 157.

Jurkam, Dt Saran. Sherds of NBPW [11.16] were found.

IAR 1970-1.

Jyankal (Jankal), Dt Chitradurga. Lower Palaeolithic [4.2] site.

Seshadri, M., 1956, *Stone-using Cultures of Pre & Proto-historic Mysore*, London, p. 15.

K

- Kabar-Khadak-Pada.** See KAN VALLEY.
- Kabbaghalli,** Dt Mysore. Site with cairn circles [4.17.8].
IAR 1962-3.
- Kabirpur,** Dt Saharanpur. Site with Harappa Ware [11.3] and OCW [11.5].
IAR 1966-7.
- Kabrahat,** Dt Durg. Megalithic [4.17.6] site. See SORAR.
ASI-AR 1930-4.
- Kabra Pahar,** Dt Raigarh. Microlithic tools were found in the painted rock-shelters [13]. They consisted of long blades mostly with serrated edges, lunates and cores of chalcedony, jasper and agate. The tools were similar to those found at JABALPUR, PACHMARHI and ADAMGARH.
IAR 1955-6. Gordon, D.H., 1958, *Prehistoric Background of Indian Culture*, Bombay, 23, 101.
- Kachhwa,** Dt Karnal. Late Harappa [4.10] site comparable with MITATHAL II B.
Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 125.
- Kachinda,** Dt Bankura. Microliths (of unspecified nature).
IAR 1960-1.
- Kadamalaiputur,** Dt Chingleput. Megalithic [4.17.9] site. See PERAMBAIR.
ASI-AR, 1908-9, pp. 92.
- Kadambapuram,** Dt Karimnagar. Prehistoric graves (of unspecified nature).
IAR 1967-8.
- Kadambur,** Dt Cannanore. Rock-cut caves, possibly Megalithic [4.17.10].
IAR 1960-1.
- Kadampur,** Dt Bijapur. Site with Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2.3]) tools.
IAR 1963-4. Pappu, R.S., 1974, *Prehistoric Studies in the Upper Krishna Basin*, Poona, p. 35.
- Kadana,** Dt Panch Mahals. Microliths [4.5] were found at the dam site.
IAR 1972-3.
- Kadarmandalgi,** Dt Dharwar. Site with Neolithic tools, probably of the Chalcolithic [4.18.8] complex, dolmens [4.17.8] and early historical material. See HANDIGNUR.
IAR 1958-9.
- Kadattur¹,** Dt Dharmapuri. Megalithic habitation site and Megalithic cairn circles [4.17.9].
IAR 1970-1.
- Kadattur²,** Dt Kolar. Open-air Neolithic-Megalithic [4.6.9, 4.17.8] site.
IAR 1967-8.
- Kadia Dungar,** Dt Baroda. Site with ancient stone quarries and habitations.
IAR 1968-9.
- Kadihalli,** Dt Belgaum. Megalithic site with passage chambers [4.17.8].
Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 15-23.
- Kadikkalpatti,** Dt Pudukkottai. Megalithic [4.17.9] site.
Manual of Pudukkottai State, 2, 1944, p. 939.
- Kadiramahalli,** Dt Kolar. Megalithic [4.17.8] site.
IAR 1961-2.
- Kadirampatti,** Dt Coimbatore. Site with cairn circles [4.17.9].
IAR 1961-2.
- Kadirenahalli,** Dt Kolar. Megalithic [4.17.8] site.
IAR 1969-70.
- Kadirinayakkanhalli,** Dt Dharmapuri. Late Stone Age (Mesolithic [4.5]) site.
IAR 1970-1.
- Kadit-Khurd,** Dt Ahmadnagar. Site with tools of Series II (Middle Palaeolithic [4.3]) and Jorwe Ware [11.11].
IAR 1955-6.
- Kadiya Dungar,** Dt Bharuch. Early historical [4.18.2] site near Jahajpur.
IAR 1966-7; 1967-8.
- Kadiyapatti,** Dt Pudukkottai. Megalithic [4.17.10] site.
Manual of Pudukkottai State, 2, 1, 1944, pp. 515-8.
- Kadiyur,** Dt Coimbatore. Megalithic site with dolmens [4.17.9].
Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.
- Kadkal,** Dt Raichur. Megalithic site with cairn stone circles [4.17.8].
AR Hyderabad Arch. Dept, 1936-7, pp. 8, 16-8.
- Kadod,** Dt Surat. Mesolithic [4.5] site.
IAR 1966-7; 1967-8.
- Kadoli,** Dt Belgaum. Early historical [4.18.11] site.
Progress Rep. of Kannada Res. Soc., 1947-52, p.2.
- Kadukota,** Dt Bhilwara. Site with black-and-red ware (of AHAR² affiliation [11.6.2] ?), the more important types being: the bowl with flaring or splayed-out rim and convex sides, or sharpened rim and almost straight sides, or incurved or flaring rim and blunt-carinated shoulder, or flaring rim and flanged shoulder, or rounded bottom

and straight-edged flattened or obliquely cut rim; the vase with splayed-out rim and blunt-carinated shoulder; and the dish with sharpened rim. Painted designs executed in dull-white pigment both internally and externally are noticeable on a fairly large number of pots, the motifs being concentric circles, vertical strokes, wavy lines in groups, cross-hatched lozenges, oblique lines in groups from different directions, dots, vertical lines and dots and wavy lines jointed to a horizontal band.

IAR 1957-8.

Kadwada¹, Dt Bidar. Megalithic [4.17.8] and early historical [4.18.11] site.

Karnataka Bharati, 11, 3.

Kadwada², Dt Guna. Lower and Middle Palaeolithic [4.2.3] tools.

IAR 1961-2; 1972-3.

Kadwar, Dt Junagadh. Site with Red Polished Ware [11.23].

IAR 1957-8.

Kaero Timbo, Dt Surendranagar. Harappa [4.9] site at a distance of 8 km from RANGPUR.

IAR 1954-5.

Kagas, Dt Birbhum. Site with black-and-red ware characteristic of the MAHISDAL complex [4.14.4].

IAR 1963-4.

Kagwali, Dt Saharanpur. site with Śunga-Kushan red ware.

IAR 1963-4.

Kaharbari, Dt Hazaribagh. Three copper shouldered celts and two pieces of unwrought copper [4.11].

Information from S. Asthana.

Kaheda, Dt Karimnagar. Middle Palaeolithic [4.3] site.

Gururaja Rao, B.K., ed., 1978, *Decade of Arch. Studies in s India*, Dharwad, p. 48.

Kahnwara, Dt Jabalpur. Microliths consisting of blades, crescents, scrapers and cores.

IAR 1958-9.

Kahinjar, Dt Unnao. NBPW [11.16] site.

IAR 1962-3.

Kaila Kunehra, Dt Meerut. PGW [11.14] site.

IAR 1967-8.

Kailapur, Dt Muzaffarnagar. Thick red ware of possibly Harappa [11.3] affiliation, PGW [11.14] Black-slipped Ware [11.13], grey ware associated with NBPW [11.16], red ware of Śunga-Kushan assemblage and medieval ware.

IAR 1962-3.

Kailasa, Dt Varanasi. NBPW [11.16], black-and-red ware and a inscribed sealing of the Śunga period.

IAR 1961-2.

Kailaspur, Dt Saharanpur. Harappa Ware [11.3] and OCW [11.5].

IAR 1966-7.

Kainnaur, **Kainor**, Dt Rupnagar. Harappa [4.9] and late Harappa [4.10] site.

IAR 1962-3; 1964-5. Suraj Bhan, 1975, *Excavation at Mitathal and other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 122.

Kairana, Dt Muzaffarnagar. Site with PGW [11.14].

IAR 1962-3.

Kaitha, Dt Bhind. NBPW [11.16] and black-and-red ware [11.6.4].

IAR 1958-9.

Kaithora, Dt Muzaffarnagar. PGW [11.14], grey ware associated with NBPW [11.16], Black-slipped Ware [11.13], red ware of Śunga-Kushan assemblage and medieval ware.

IAR 1962-3.

Kaittiyankottai, Dt Madurai. Megalithic sites with dolmens [11.17.9].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Kaj (20°44'; 70°51'), Dt Amreli. Site with late Harappa Ware [11.3].

AI, 18 & 19, 1962 & 1963, p. 205.

Kajailana, Dt Ujjain. Historical site (of unspecified nature).

IAR 1971-2.

Kajalkura, Dt Bankura. Site with tools of Series II Middle palaeolithic [4.3]) and microliths (Mesolithic [4.5]?).

IAR 1959-60.

Kajipura, Dt Saharanpur. OCW [11.5] site.

IAR 1964-5.

Kajli, See PURNA VALLEY.

Kakan-pada, Dt Dhule. Late Stone Age (Mesolithic [4.5] site.

IAR 1963-4.

Kakanpur, Dt Panch Mahals. Late Stone Age (Mesolithic [4.5]) site.

IAR 1971-2.

Kankanur, Dt Kurnool. Palaeoliths were collected along the stream Galeru. On a mound near Kakanur Russet-coated Painted Ware [11.22] and black-and-red polished ware were found.

IAR 1959-60.

Kakarabhat, Dt Durg. Site with megaliths [4.17.6].

IAR 1972-3.

Kakarahata, Dt Jabalpur. NBPW [11.16], black-and-red ware, decorated pottery and ring-wells [14.15].

IAR 1960-1; 1965-6.

Kakarda¹, Dt Dhule. Site with Late Stone (Mesolithic [4.5]) Age and microlithic tools.

IAR 1960-1.

Kakarda² Dt Surat. Lower [4.2] and Middle Palaeolithic [4.3] and Mesolithic [4.5] site.

IAR 1967-8.

Kakarwa, Dt Kutch. Historical site. See AJMEL.

IAR 1965-6.

Kakasvade, Dt Dhule. Short blades ascribable to the post-Harappa Chalcolithic period [4.14.6].

IAR 1965-6.

Kakballa, Dt Bellary. Site with ash-mound [14.3] (same as following?).

Paddayya, K., 1973, *Investigations into the Neolithic Culture of Shorapur Doab, s. India*, Leiden, fig 29.

Kakballa hill, Dt Bellary. Neolithic [4.6.9] site. (Same as preceding?).

Footte, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, pp. 77-8.

Kakkad, Dt Trichur. Rock-cut Megalithic cave [4.17.10].

AI, 12, 1956, p. 99.

Kakka Mandiala, Dt Amritsar. Site with Śunga-Kushan pottery.

IAR 1964-5.

Kakkerā, Dt Gulbarga. Ash-mound [14.3] at a Chalcolithic [4.17.8] site. (Same as following?).

Paddayya, K., 1973, *Investigations into the Neolithic Culture of Shorapur Doab, s. India*, Leiden, p. 7.

Kakkers, Dt Gulbarga. Site with ash-mounds [14.3] (Same as preceding?).

IAR 1965-6.

Kakoni, Dt Kota. Microliths (of unspecified nature) along the banks of the Parwani river.

IAR 1957-8.

Kakoria (25°3'; 83°1'), Dt Varanasi, situated on the right bank of the Chandraprabha in Chakia Subdivision at a distance of about 40 km to the s.-e. of Varanasi. The valley is enclosed by a number of hillocks about 120 to 150 m high from the surrounding plains, the important among them, at the foot of which megaliths are situated, being known as HATHINIA hillock and BHADAHAWAN-PAHAR. Twelve Megalithic graves and four trenches in the habitation area were excavated by the Univ. of Allahabad under the direction of G.R. Sharma during the years 1962-4 (IAR 1962-3, p. 39; 1963-4, p. 57).

Megaliths. Out of the 12 megaliths that have been opened eight belong to the category of cairn circle (Megs I, II, III, IV, VIII, IX, XI and XII), three (Megs V, VI and VII) to the category of cist and the remaining one (Meg X) to the category of cist within cairn. Ten monuments are located at the foot of the Hathinia and the remaining two at that of Bhadahawan-pahar. Although each excavated cairn circle has been found to vary in its individual details a common feature is a more or less rectangular pit oriented e.-w. and dug down into the natural soil to an average depth of 1.37 m; thereafter the bulk of the grave goods in the form of pottery, microliths, skeletal remains, etc., were placed on the floor level with a cushion of red sand or of ash. There is no uniformity in placing of the grave goods inside the graves. Sometimes they were placed either near the corner (Megs IV and VIII) or in the centre along the s. edge of the grave (Meg IX) or in the centre, or was uniformly distributed throughout the whole grave pit from the bottom to the level of the lip of the pit. After the placing of the grave furniture the pit was generally filled up with the same dug-out earth and finally the

ritualistic procedure was concluded by the erection of a hemispherical cairn of stone boulders bounded by a stone circle of varying diameters.

The cist does not appear to be a popular type in this region as is evident from the discovery of only seven or eight such monuments amidst thousands of cairn circles. For preparing a cist a pit was first dug into the natural ground. Thereafter the orthostats were placed in such a manner so as to form four side walls of a box-like chamber. Sometimes a secondary packing of small stone pieces was provided on both the sides of the uprights with a view to saving them from collapse. At the end of the burial ritual the tomb was finally sealed by a massive slab resting directly on the four orthostats. The uprights and the capstones often enclosed by stone circle generally rose above the ground surface.

The cist within cairn type generally gives the impression of a few rising heaped-up cairn of stone blocks before excavation. Excavation however revealed a cist tomb-oriented e.-w. within a grave pit, almost in the centre of the stone circle. The four sides of the cist were built of stone pieces resting against the four side walls of the unlined grave pit. No capstone exists. Four stone slabs of indeterminate use and a few potsherds have been recovered from the grave.

Of the grave goods mention may be made of pottery, microliths (Megs III and XI), a gold bangle (Meg III), terracotta beads and a few skeletal remains. The pottery consisting of the Black-and-red Ware [11.15.1] and black-slipped [11.13] and red wares is represented by: the dish and bowl with mostly everted rim and roundish profile; perforated and footed vessel; lid; pedestalled cup; and elliptical and globular vase. The pedestalled cup, funnel-shaped lid, convex-sided dish, footed and perforated vessel and elongated conical vase of Kakoria are thought to be the links between the Megalithic cultures of Varanasi on the one hand and that of the Deccan and s. India [4.17.9, 10] on the other. Microliths mainly on chert consist of blades, blunted backs, scrapers and serrated blades along with a few flakes and chips. The skeletal remains from these graves consist of teeth of the bovid (Megs I and IV), a fragmentary human tooth (Meg V) and fragments of a human skull and an animal bone piece (Meg VI).

Habitation site. The habitation site of the Megalithic folk is located on either bank of the river CHANDRAPRABHA immediately to the n.-w. of the Megalithic burial site of Hathinia hillock, covering an area of 800 × 600 m. Four cuttings (KKR I, II, III and IV) have been dug deep into the natural soil struck at a depth of 1.57 m. The entire occupational deposit is represented by seven layers, all Megalithic in content. No cultural break at the site is noticed and the majority of the typical pottery forms continue from the beginning to the end. However

on the basis of the raw material used for the making of the microliths the introduction of a few new types at different levels and concentration of microliths and potsherds in some layers, the whole habitation deposits can be subdivided in three phases: I A, I B and I C, comprising layers 7 to 5, 4 to 3 and 2 to 1 respectively.

The ceramic assemblage from the habitation site is essentially the same as that of the graves and consists of red ware, Black-and-red Ware and black-slipped ware. The bulk of the pottery is plain and wheel-made. The handmade specimens in small numbers are confined to red ware alone. The clay used for manufacturing the pots is not well-levigated and generally contains medium to fine grains of quartz and grit. The pottery is of medium to coarse fabric and is not very well-fired. The utilitarian plain red ware forming the majority is generally of thick section and medium to coarse in fabric and varies in colour from orange or pale-red to deep-brick red. It includes: the shallow, convex-sided and deep bowl; shallow and convex-sided dish; shallow bowl-cum-cover; beaker; button-based goblet; bowl-cum-lid; shallow and deep basin with externally collared rim, including the lipped variety also; funnel-shaped lid; footed and perforated vessel; vase with conical profile; pear-shaped vase; high concave-necked vase; large and medium-sized storage jar with carinated neck; concave-necked vase with beaded or collared rim; and *hāndī* or cooking vessel. A few sherds in this group with ochrous surface resemble in general appearance the OCW [4. 12] of w. Uttar Pradesh. The ochrous surface of these pots seems to be the result of the pulverization through external causes. Traces of ochrous red slip on both the sides of some of the pots are noticed. The mottled or blotchy surface of some of the pots is most probably the result of indifferent firing. The Black-and-red Ware, generally of medium to coarse fabric, is represented by: the bowl with everted or flared rim; dish; shallow dish-cum-basin; straight-sided trough; beaker; cup-on-stand or pedestal cup; funnel-shaped lid; and vase. The smooth surface of some of the sherds is the result of burnishing. The black-slipped ware, generally of medium fabric, thin section and smoky grey core, includes: various types of the bowl (spherical, ovaloid, subovaloid, pedestalled and carinated) often with everted rim; convex-sided dish with tapering to round base including some with externally marked depression on the rim; beaker; funnel-shaped lid; and small vase. Some of the sherds of this ware with smooth burnished surface compare well with the NBPW [11. 16] in brilliance. A few sherds with grey surface, though very close to the black-slipped ware in general appearance, have also been found. Some of the pots of this ware the slip of which has worn out completely or partially resemble very much the corresponding pots of grey ware. The typology is also the same as that

of the black-slipped ware. Thus the grey ware though distinct in outer appearance shares all the features of the black-slipped ware.

Though the bulk of the pottery is plain decoration in the form of incised and applied patterns is also found on some sherds of red ware and thick Black-and-red Ware. Incised designs comprise dots, strokes, chevrons, wavy, vertical, horizontal and oblique lines, criss-cross, lattice, diamonds and floral designs. A few sherds with thumb-nail impressions forming a cord or chain pattern on applied strips of clay are also present, as also some sherds with ripple marks or channel-like designs have also been met with.

Microliths fashioned on chalcedony, agate and chert consisting of finished tools like blades, blunted backs, lunates, scrapers, serrated blades and points, besides numerous cores, flakes and blanks, are found in considerable numbers. Some flakes, cores and tools exhibit the employment of the crested-ridge technique [16. 15.2]. Thin and narrow parallel-sided blades form the majority of the finished tools. This lithic assemblage of the site resembles that of c. India and the Deccan [4. 14.5, 6], and essentially belongs to the category of 'short blade industry.'

Other finds include various types of beads of semi-precious stones and terracotta, spheroid hammer-stones with battering marks, sling balls, pestles [6. 19] and copper objects.

The excavation reveals the structural remains of two house plans. Due to the vertical nature of the dig complete plan of houses has not been available. One of them, belonging to Phase I A, is made of mud blocks. The exposed portion consists of a courtyard enclosed by rooms of varying dimensions. Two fully exposed rooms measure 2.48×2.48 m and 2.79×3.47 m. One of the floors is paved with lumps of burnt clay and potsherds. The partially exposed second house, of Phase I C, consists of a complete room (2.74×1.98 m) and part of an adjoining room.

Chronology. For fixing the tentative chronology of the site the following points have to be taken into consideration: (1) The absence of iron and the NBPW in the graves and the habitation site on the one hand and the occurrence of microliths exhibiting the employment of crested-ridge technique, copper objects and the nature of the pottery on the other give a Chalcolithic character to the Megalithic culture of Kakoria. (2) some of the pottery types have close parallels in the Chalcolithic sites of c. India and the Deccan; they are: the bowl with everted rim; carinated bowl; jar with high neck; globular vase with concave neck and beaded-out rim; shallow dish with internally rolled rim; and vase with tapering sides. Some of the incised designs and applied patterns are also present in the Chalcolithic pottery assemblage

of c. India, e.g. NAVDATOLI. (3) A few shapes like the beaker, cup-on-stand, button-based goblet, high-necked vase and sherds with ripple marks are available in the late Harappa pottery assemblage [11.4] of Haryana and w. Uttar Pradesh. (4) Kakoria has also yielded some sherds of the OCW fabric and shapes such as: the vase with high concave neck; vase with beaded-out rim; cup-on-stand or pedestalled cup; beaker; goblet; bowl with everted or clubbed rim; basin with externally clubbed or collared rim; clubbed rim; and shallow bowl or cover with featureless rim. Like Kakoria some sites of the region such as BARA, ATRANJIKHERA, LAL QILA, NOH and SAIPAI have also yielded incised sherds bearing dots, strokes, zigzags, wavy lines and criss-cross designs. (5) Nearer home, in the c. and e. Ganga valley, sites like PRAHALADPUR, SONPUR and CHIRAND also offer some analogous shapes, viz. the pedestalled cup, convex-sided dish, bowl with everted rim and basin. The Black-and-red Ware, black-slipped ware, red ware and microliths also occur at these sites. (6) Excavation at KOLDIHWALA in the BELAN VALLEY has produced material almost identical with that of Kakoria, such as pottery comprising the Black-and-red Ware and black-slipped and red wares, microliths including crested-ridge specimens, copper objects, various types of beads of terracotta and semiprecious stones, mullers and sling balls. The Chalcolithic culture of KOLDIHWALA which has also yielded a ^{14}C date of 1440 ± 120 B.C. (for the lower Chalcolithic horizon) seems to be slightly younger than the Chalcolithic-Megalithic culture of Kakoria on account of its superior pottery on the one hand and paucity of microliths on the other.

From an overall assessment therefore the beginning of the Chalcolithic-Megalithic culture of Kakoria may well be placed somewhere in the first half of the 2nd millennium B.C. The site seems to have been finally deserted in 7th century B.C., well before the introduction of NBPW in the area. [See also 4.14.2, 4.17.3, 11.15.1.]

—B.B. MISRA

Kakra, Dt Ranchi. Chisel of basalt and a small polished celt of quartzite.

Roy, S.C., 1916, in *Jour. Bihar & Orissa Res Soc.*, 2, p. 67.

Kakrala. See SUHRAKILLOI.

Kakrauni, Dt Ambala. Site with PGW [11.14], NBPW [11.16], black-painted red ware and incised ware.

IAR 1963-4.

Kakraut, Dt Meerut. Site with red ware of the Śunga-Kushan period and medieval ware.

IAR 1966-7.

Kakusi, Dt Nilgiri. Megalithic [4.17.9] site.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras, p. 228.

Kakuturu. See KANDUKURU.

Kalabaria ($22^{\circ}5'$; $86^{\circ}38'$), Dt Mayurbhanj. Lower Palaeolithic [4.2] site. See KULIANA.

Bose, N.K., & Sen, D., 1948, *Excavations in Mayurbhanj*, Calcutta, pp. 53-9.

Kaladgi, Dt Bijapur. On the flat top of a quartzite hill near Kaladgi, a site with about 40 megalithic structures built of quartzite sandstone, laterite and conglomerates was discovered. Among the megaliths two hitherto unknown types in India were also brought to light: one of them had a port-hole in the circle stone connected with the chamber through a passage.

IAR 1967-8. Sandara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 37-41.

Kaladi, Dt Malappuram. Site with rock-cut Megalithic caves [4.17.10].

IAR 1969-70.

Kalady, Dt Palghat. Rock-cut cave yielding the Megalithic Black-and-red Ware [11.15.3] and iron implements.

IAR 1965-6.

Kala Garh, Dt Kurukshetra. Late Harappa [4.10] site.

Suraj Bhan & Shaffer, J.G., 1978, in *Man & Environment*, 2, p. 62.

Kalagotla, Dt Kurnool. Stone tools (of unspecified nature), megaliths and remains of the early historical period were found to co-occur.

IAR 1959-60.

Kalahasti Dt Chittoor. Early Stone Age (Lower Palaeolithic [4.2]) tools were collected from the area near 37th km stone on Arkonam-Tirupathi road, flood-plain of the Katur-nadi, a few km from Kalahasti, and an area near 25th km stone on Kalahasti-Tiruvallur road. At Kalahasti itself Lower and Middle [4.3] Palaeolithic tools were found.

IAR 1964-5; 1968-9.

Kalai, Dt Mainpuri. PGW [11.14] and NBPW [11.16] site.

IAR 1960-1.

Kalait, Dt Jind. Late Harappa [4.10] and PGW [11.14] site.

Suraj Bhan, 1976, *Excavation at Mitathal & other Explorations in the Sulej-Yamuna Divide*, Kurukshetra, p. 124.

Kalakaleswara, Dt Dharwar. Megalithic urn burial [4.17.8] site and historical site (of unspecified nature).

IAR 1964-5.

Kalakkudipatti, Dt Pudukkottai. Megalithic [4.17.10] site.

Manual of Pudukkottai State, 2, 1, 1944, p. 934.

Kalalhatti, Dt Saharanpur. OCW [11.5] site.

IAR 1967-8.

Kalamedevur hill, Dt Anantapur. Neolithic [4.6.8] site yielding celts, adzes, chisels, scrapers, hammers, etc.

Foote, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Kalan¹, Dt Jabalpur. Site with Series II (Middle Palaeolithic [4.3]) tools.

IAR 1959-60.

Kalan² (Jabiran), Dt Saharanpur. Early historical [4.18.1] site.

1AR 1970-1.

Kalan³. See YAMUNA VALLEY.

Kalani-ka-Kot, Dt Ghazipur. Black-and-red ware (of unspecified affiliation).

1AR 1963-4.

Kalapan (21°55'; 70°20'), Dt Rajkot. Late Harappa [4.10] site assignable to RANGPUR II B and II C.

AI, 18 & 19, 1962 & 1963, p. 206.

Kalapatti, Dt Coimbatore. Double-chambered port-holed cist [4.17.9].

1AR 1957-8.

Kalasakkadu, Dt Pudukkottai. Megalithic [4.17.10] site. *Manual of Pudukkottai State*, 1, 1, 1944, p. 515-8.

Kalathur-pudu-pakkam, Dt Chingleput. Megalithic [4.17.10] site.

AI, 22, 1966, p. 30.

Kalatpur, Dt Mysore. Megalithic burial [4.17.8].

1AR 1968-9.

Kalvad, Dt Jamnagar. Harappa [4.9] and Red Polished Ware [11.23] site.

1AR 1954-5; 1957-8.

Kalavagunta, Dt Chittoor. Site with port-holed cists [4.17.7].

Jour. Asiatic Soc., Old Series, 13. Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Kayalat, Dt Jind. Sherds of pre-Harappa [11.2], Harappa [11.3], PGW [11.14] and NBPW [11.16] were collected.

1AR 1966-7.

Kalbeti, Dt Saharanpur. Harappa [4.9] site.

1AR 1965-6.

Kalcadambur, Dt Coimbatore. Site with Megalithic stone circles [4.17.9].

ASI-AR 1934-5.

Kaldevanhalli, Dt Bijapur. Chalcolithic [4.14.8] habitation and burial site. See BAGLUR.

1AR 1960-1.

Kale, Dt Lohit. Stone Age site on the high terraces between 914-4 and 1219-50 m yielding choppers, a proto-handaxe, cleavers, scrapers, flakes and cores. A few Neolithic implements including a shouldered celt were also found. N.-n.-e. of Teehun around Kale a few ovates [4.2] and a Neolithic [4.6.6] implement were discovered.

1AR 1967-70. Bopardikar, B.P., 1972, in *Arch. Congress & Seminar*, Nagpur, p. 3.

Kalegaon, Dt Ahmadnagar. Tools of Series II (Middle Palaeolithic [4.3]) were found together with a number of fossilized animal bones, particularly noteworthy being the head of a bison or a similar animal.

1AR 1955-6.

Kalgod, Dt N. Kanara. Early historical site (of an unspecified nature).

Information from A. Sundara.

Kalgudi, Dt Raichur. Chalcolithic [4.14.8] site.

Karnataka Bharati, 6, 1, pp. 64-75.

Kalhalli, Dt Bijapur. Neolithic [4.6.9]-Chalcolithic [4.14.8] and early historical site with red-slipped ware,

black-and-red ware and Russet-coated Painted Ware [11.22].

P.B. Desai *Felicitations Vol.*, Dharwar, 1971, pp. 4-30. 1AR 1972-3.

Kaliakata, Dt Dhenkanal. Site with Series I (Lower Palaeolithic [4.2]) tools.

1AR 1957-8.

Kaliamba, Dt Dhule. Site with palaeoliths (of an unspecified nature).

1AR 1959-60.

Kaliammankoil, Dt Salem. Four neolithic celts [4.6.10] from the bed of the Kaveri.

1AR 1961-2.

Kalianpur. (21°50'; 69°25'), Dt Jamnagar. Late Harappa [4.10] site assignable to RANGPUR II B and II C.

AI, 18 & 19, 1962 & 1963, p. 206.

Kaliapathar, Dt Bankura. Microlithic (of an unspecified nature).

1AR 1963-4.

Kalibangan -1 and -2, (29°05'; 74°05'), Dt Ganganagar, literally meaning black bangles, from the occurrence on the surface of the countless fragments of weather-stained terracotta bangles, lying along the left bank of the now-dry river Ghaggar (ancient SARASVATI) in the n. part of Rajasthan. The Harappa character of the site was first recognized in 1950 by Ghosh, 1952, who explored a considerable area of the Sarasvati valley and identified over 20 Harappa sites. The site comprises two mounds (KLB-1 and -2), the smaller one located to the w. and the larger to the e., recalling an identical disposition of the mounds at Mohenjo-daro and Harappa. The site was systematically excavated for nine field seasons between the years 1961 and 1969 by B.B. Lal and the author on behalf of the ASI (1AR 1960-1, p. 31; 1961-2, p. 38; 1962-3, p. 20; 1963-4, p. 30; 1964-5, p. 35; 1965-6, p. 38; 1966-7, p. 31; 1967-8, p. 42; 1968-9, p. 28). The excavation has brought to light a twofold sequence of cultures, of which the upper one (Kalibangan I) is Harappa, showing the characteristic grid layout of a metropolis and the lower one (Kalibangan II) pre-Harappa or antecedent Harappa (also called proto-Harappa by some, Ghosh, 1965; Lal, 1979).

Pd I. The settlement of Kalibangan I was situated on the bend of the river beyond the active flood-plain and was a parallelogram, some 250 m from n. to s. and 180 m from e. to w. It was fortified from the beginning of the occupation. The fortification wall was made of mud bricks (30 × 20 × 10 cm) and in its extant portion shows two structural phases. In its earlier phases the basal width was 1.9 m, while in the later it measured 3 to 4 m, both the inner and outer faces being plastered. Within the walled area, the houses were built of mud bricks of the same size as used in the fortification wall; the use of baked bricks is attested by a drain within the houses, remains of ovens and cylindrical pits, lined with lime

plaster. The distinctive trait of this Pd is, however, the pottery, first identified at SOTH, which is characterized by six fabrics, labelled A, B, C, D, E and F [1.2]. Of these Fabrics, E and F distinguished essentially by surface colour (E by buff and F by grey) do not show marked individualities in shape or in painted design and are also rather uncommon, particularly the latter. Among the remaining, Fabrics A, B and D are marked by an individuality which isolate them from the Harappa assemblage. Fabric A is a carelessly potted ware showing painted designs in light-black combined at times with white; Fabric B is distinguished essentially by the roughened or rusticated surface of the lower portion of the pots, the upper part being smooth-slipped; Fabric C is marked by a fine-textured paste and all-over smooth-slipped surface in shades of red and purple or plum-red, recalling pottery from the pre-defence deposits of Harappa; Fabric D is characterized by a thick sturdy section, represented in such shapes as the heavy jar, trough and basin, the interior sides of the latter being decorated with ridged incisions of varying patterns.

Among the other finds of this Pd are: small-sized blades of chalcedony and agate, sometimes serrated or backed; beads, variously of steatite, shell, carnelian, terracotta and copper; bangles of copper, shell and terracotta; terracotta objects like a toy-cart wheel [16.17] and a bull; quern with mullers [6.19]; a bone point; and copper celts, including an unusual axe.

An outstanding discovery of the excavation is a ploughed field situated to the s.-e. of the settlement outside the town-wall. It shows a grid of furrows with one set closely spaced (about 30 cm apart) running e.-w. and the other widely-spaced (about 1.90 m apart) running n.-s., indicating a double-cropping pattern as obtains even now.

The occupation endured five structural phases, rising to a height of about 1.6 m, when it was brought to a close by a catastrophe, perhaps seismic [9.3]. Thereafter the site seems to have been abandoned though only temporarily. The duration of Kalibangan I occupation may be ascribed to c. 2450-2300 B.C. on the basis of ^{14}C determinations, without MASCA correction.

Pd II. In this Pd the structural pattern of the settlement was changed. There were now two distinct parts: the citadel (KLB-1) on the w., located atop the abandoned settlement of Pd I, and the lower city (KLB-2) towards the e., laid out on the natural plain, leaving a gap of about 40 m.

The citadel complex was roughly a parallelogram, some 240 m n.-s. and 120 m e.-w. and consisted of two almost equal but separately patterned parts. Both these parts were contained by a fortification wall, 3 to 7 m in width and reinforced at regular intervals with rectangular salients or bastions. The fortifications were built

throughout of mud bricks (size: $40 \times 20 \times 10$ cm and $30 \times 15 \times 7.5$ cm) representing two structural phases, the larger size for the earlier phase and the smaller size for the later. Both the inner and outer faces of the wall were plastered with a coat of mud. The s. half of the citadel was more heavily fortified and besides the corner bastions contained rectangular salients on the n. and s. sides. The enclosed area contained some five to six massive platforms of mud bricks, each separate from the other and perhaps intended for a specific purpose by the community as a whole. Of these, sizeable portions of five, including the complete outline of one, have been exposed. At no point are these platforms found to be joined to or integral with the fortifications. Access to the working floor of the platforms was by means of steps which rose from the passage separating the platforms. Through the passage ran baked-brick drains. Of these buildings which stood on the platform, no intelligible plans are available, as they have been obscured by depredations of brick robbers. Nevertheless available remains do indicate that some of these might have been used for religious or ritual purposes, as attested by the occurrence on one of a rectangular brick-lined pit containing bones of antler and bovine representing perhaps a sacrifice and atop another of a row of seven rectangular fire altars aligned beside a well. The entrances of this part of the citadel were located on the s. and n. The s. one was situated between the central salient and the s.-w. corner tower, while the n. one comprised a stairway between the two centrally located salients and led up to the required height, at which passage across the fortification wall was provided. The n. half of the citadel, which was also fortified, contained residential buildings, perhaps of the elite. There were three (one each on the e., n. and w. sides) entrances to this part of the citadel, none of which was of the ramp or stairway type.

The lower city was also a parallelogram, some 240 m from e. to w. and 360 m from n. to s., and lay to the e. of the citadel beyond a broad space of 40 m. It was found to be enclosed by a fortification wall, ranging in width from 3.5 to 9 m, involving three to four structural phases. It was made of mud bricks of similar sizes as those used for the fortifications of the citadel ($40 \times 20 \times 10$ and $30 \times 15 \times 7.5$ cm). Within the walled city was a gridiron plan of streets running n. to s. and e. to w., dividing the area into blocks. The existence of four arterial thoroughfares, running n. to s. and three (with an indication for the fourth) running e. to w. has been established by excavation. To avoid damage from the vehicular traffic fender posts were provided at some street corners. There were two entrances to the fortified area, one on the n. and the other on the w. The houses within the walled city were made of mud bricks of the size of $30 \times 15 \times 7.5$ cm, the

use of baked bricks being confined to wells, drains, bathing platforms, door-sills, etc.

Besides the above two principal parts of the metropolis, there was also a third one—a modest structure situated upwards of 80 m e. of the lower city and containing four to five fire altars. This lonely structure may perhaps have been used for ritual purposes.

The finds of this Pd are all characteristic of the Harappa civilization [4.9] significant amongst which is a cylinder seal. (It is, however, noteworthy that the pottery of Pd I continues alongside the Harappa pottery up to about half the height of KLB-2 whereafter it entirely gives way to the Harappa).

About 300 m to the w.-s.-w. of the citadel was found the cemetery of the Harappa period. Three types of burials have been attested: extended inhumation in rectangular or oval graves; pot burial in a circular pit; and rectangular or oval grave-pit, containing only pottery and other funerary objects. The latter two methods were unassociated with any skeletal remains.

An inclusive bracket of 2300-1750 B.C. has been postulated for the Harappa occupation at Kalibangan.

Ghosh, A., 1952, in *Bull. National Institute of Sciences of India*, 1, pp. 37-42; 1965, in Misra, B.N., & Mate, M.S., ed., in *Indian Prehistory: 1964*, Poona, pp. 43-124. Lal, B.B., 1979, in Agrawal, D.P., & Chakrabarti, D.K., ed., *Essays in Indian Protohistory*, Delhi, pp. 65-97. Thapar, B.K., 1975, in *Expedition*, 17, 2, Winter, pp. 19-32. — B.K. THAPAR

Kalibangan -3, Dt Ganganagar. Site with Rang Mahal Ware [11.24].

Unpublished.

Kalichitedu. See KANDLERU VALLEY.

Kaligiri, Dt Nellore. Lower Palaeolithic [4.2] site yielding Abbevillian and Acheulian handaxes, scrapers, flakes, etc.

Aiyappan, A., *Manley Collection of Stone Age Tools*, Mem. ASI, 68, p. 6.

Kalikapur, Dt Burdwan. Microliths and flakes (of unspecified nature).

IAR 1961-2.

Kalikunya, Dt Chittaurgarh (?). Site with microliths (of unspecified nature).

IAR 1956-7.

Kalimpong, Dt Darjeeling. Neolithic [4.6.6] tools.

Brown, J.C., 1917, *Catalogue of Prehistoric Antiquities in the Indian Museum*, Simla. Das Gupta, P.C., 1966, *Exploring Bengal's Past*, Calcutta.

Kalina, Dt Meerut. PGW [11.14] site.

IAR 1967-8.

Kalingapatam, Dt Srikakulam. Megalithic Black-and-red Ware [11.15.3] was found together with a black-and-grey ware treated in white (kaolin) paint under a black slip, one of the sherds being of Rouletted Ware [11.21].

IAR 1958-9; 1961-2.

Kalipur, Dt Bastar. Lower and Middle Palaeolithic [4.2, 3] site.

Madhya Pradesh Sandesh, 13 June 1970, p. 10.

Kalisingh valley, Dt Jhalawar. Early Stone Age (Lower Palaeolithic [4.2]) tools were found.

IAR 1970-1.

Kaliyapatti, Dt Pudukkottai. Megalithic [4.7.9] site.

Manual of Pudukkottai State, 1944, 1, pp. 515-8.

Kalka, Dt Ambala. Terrace 1 of the river SIRSA yielded a miniature peddle chopping tool [4.2], a blade knife, side scrapers, a core, two points and flakes.

IAR 1971-2.

Kalkhamba, Dt Belgaum. Dolmens and Megalithic habitation site [4.17.8].

IAR 1963-4.

Kal-Khera, Dt Ambala. PGW [11.14] and early historical wares.

IAR 1963-4.

Kallaguddu, Dt Srikakulam. Early historical site.

IAR 1971-2.

Kalla-Lalbazar, Dt Bankura. Microliths (of an unspecified nature).

IAR 1960-1.

Kallam, Dt Osmanabad. The site on the Manjra river yielded Middle and Late Stone Age (Middle Palaeolithic [4.3] and Mesolithic [4.5]) tools.

IAR 1971-2.

Kallanuttam, Dt Salem. Megalithic site with dolmens [4.17.9].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Kallappambadi, Dt Dharmapuri. Megalithic burial sites [4.17.9].

IAR 1969-70.

Kallapur, Dt Dharwar. Lower Palaeolithic [4.2] site.

Joshi, R.V., 1955, *Pleistocene Studies in the Malaprabha Basin*, Poona & Dharwar, fig. 5.

Kallar, Dt Kottayam. Megalithic burial site of the cist and menhir types [4.17.10].

IAR 1961-2.

Kallerimalai, Dt N. Arcot. Neolithic [4.6.10] site near Ambur.

Gururaja Rao, B.K., 1978, *Decade of Arch. Studies in s. India*, p. 3.

Kallidoddi, Dt Mysore. Megalithic cist burials [4.17.8].

IAR 1961-2.

Kalligudi, Dt Madurai. Late habitation site.

IAR 1958-9.

Kalli Najhagaman Pachchim, Dt Lucknow. NBPW [11.16] site.

IAR 1967-8.

Kallol, Dt Belgaum. Chalcolithic [4.14.8] site with remnants of an ash-mound. [14.3].

P.B. Desai Felicitation Vol., Dharwar, 1971, pp. 4-30.

Kallukottaipattai, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 1, pp. 515-8.

Kallukummi, Dt Tirunelveli. Megalithic site yielding sepulchral urns [4.17.9].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Kallumadai, Dt Coimbatore. Megalithic site with urn burials [4.17.9].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Kallumedu, Dt Chingleput. Megalithic [4.17.9] site.

AI, 22, 1966, p. 28.

Kallur¹, Dt Belgaum. Neolithic [4.6.9] and Chalcolithic-Megalithic [4.14.8, 4.17.8] site.

Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 89-90.

Kallur² (15°30'; 76°00'), Dt Raichur, in Manvi Taluka, lying at a distance of 22 km, from Raichur on Gingera road and deriving its name from the abundance of granite hillocks (*kallu* 'stone' and *ur* 'village'). Kallur proper and the surrounding granitoid hillocks abound in ancient habitations and mounds, the earliest finds assignable to the Neolithic culture [4.6.9]. From the reported surface finds four important localities deserving special notice are known to exist at this place.

The most prominent are the hillocks of Yammigudda which have several caves and open sites between rock boulders. On one of the boulders of the e. extent two buffaloes are packed over the rock face and n. of this on another boulder face are engraved two stylized figures of miniature humped bulls and a man.

While the accidental find of three copper antennae swords under a huge boulder s.-e. of Pibannur hill at Kallur, recalling those from FATEHGARH of the Copper Hoard complex [4.11] and hence an extension of the Copper Hoard culture to the s., Ahmed, 1937-40, conducted on the s. slopes a trial excavation at the open site resulting in the recovery of pottery, particularly perforated jar fragments, microlithic blades and fluted cores of chert, jasper and chalcedony, ground stone axes, etc. A few pieces of black-painted red ware comparable with those from the earliest levels of MASKI and BRAHMAGIRI I A are very important. The long blades of chert have been paralleled to the Sukkur-Rohri and Harappa [4.9] blades. Besides a lump of copper pyrite, pieces of a copper axe and ash deposits about 50 cm thick show that the site has an early Neolithic/ash-mound [4.6.9; 14.3] culture at the base. The occurrence of red-slipped ware, decorated, stamped and incised, red polished ware, sprinklers [11.23] Russet-coated Painted Ware, [11.22], shell bangles and beads of semiprecious stones and stray Sātavāhana coins reveal an extensive early historical occupation also at the site. Iron ore, meal stones and crushed quartzites indicate iron-smelting.

The other three ancient habitation sites yielding microlithic blades, Neolithic ground stone axes, pottery of the historical period, etc., are located (1) on the slopes of Agsarguda (Site 2), (2) around Kampangudda (Site 3), and (3) between Polannagudda and Pibannur hill, also called Anantagiri (Site 4).

Kallur has also extensive remains of the medieval period, the earliest and most attractive of which is the temple of Mārkaṇḍēśvara, situated near the foot of Polamma hill, with a typical Dravidian *śikhara* datable to the late Čalukyan or Kakatiya period but very much altered in later times. A huge fort-wall with five gateways belongs to the Ādil Shāhī period.

Ahmed, Khwaja, M., in *AR Arch. Dept Hyderabad*, 1937-40, pp. 21, 24-6, 31-32. Krishnaswami, V.D., 1957, in *AI*, 9, p. 71. Thapar, B.K., 1957, in *ibid.*, 13, p. 38 (for comparison of Kallur and Maski pottery). —I.K. SARMA

Kalluvilakkudiyiruppu, Dt Kanyakumari. Site containing microliths (Mesolithic ? [4.5]) and pottery.

IAR 1972-3.

Kaloarpatti, Dt Madurai. Megalithic [4.17.9] sites with dolmens.

Sewell, R., 1882, *Antiquarian Remains of the Presidency of Madras*, Madras.

Kalon, Dt Ambala. PGW [11.14] site.

IAR 1963-4. Suraj Bhan, 1976, *Excavation at Mitathal and other Exploration in the Sutlej-Yamuna Divide*, Kurukshetra, p. 123.

Kalsapadu, Dt Cuddapah. Early Middle (Lower, Middle, Palaeolithic [4.2.3]) and Late Stone Age (Mesolithic [4.5]) site.

IAR 1964-5.

Kalsi, Dt Dehra Dun. Surface collection included the incurved dish, bowl in plain grey ware, carinated *hāndī* and medium-sized vase in red ware. The collection suggests that there was a modest settlement near the Rock-edict of Aśoka followed by a medieval occupation. There are also unifacial pebble tools [4.2].

IAR 1960-1; 1969-70; 1972-3.

Kaltolambipada, Dt Dhule. Late Stone Age (Mesolithic [4.5]) tools.

IAR 1960-1.

Kalugumalai, Dt Tirunelveli. Megalithic [4.17.9] site.

Man, 30 1930, p. 137.

Kaluji-ka-Barda, Dt Ujjain. A microlithic (of unspecified nature) factory site strewn with nodules and flakes of quartz and chalcedony.

IAR 1956-7.

Kalupara, Dt Purulia. Site with microliths (of unspecified nature).

IAR 1958-60.

Kalvai, Dt Tirunelveli. Megalithic [4.17.9] site.

ASI—AR 1902-3

Kalvan, Dt Nasik. Late Stone Age (Mesolithic [4.5]) site.

IAR 1965-6.

Kalwa, Dt Aligarh. Early historical [4.18.1] site.

IAR 1962-3.

Kalyan, Dt Thana. Red Polished Ware [11.23] and a few beads were collected.

IAR 1957-8.

Kalyana, Dt Bidar. Megalithic [4.17.8] site.

Progress Rep. Kannada Res. Inst., 1953-7, p. 26.

Kalyandrug, Dt Anantapur. Megalithic Black-and-red

Ware and all-black ware [11.15] were found. (Same as following?).

IAR 1962-3.

Kalyandrug fort, Dt Anantapur. Neolithic [4.6.8] habitation site. See **AKKAMMAKONDA**. (Same as preceding?)

IAR 1965-6.

Kalyanpur¹, Dt Burdwan. Mound with yielding black-and-red, black burnished and red wares.

IAR 1968-9.

Kalyanpur², Dt Jaipur. Kushan red ware.

IAR 1972-3.

Kalyanpura¹, Dt Jaipur. Site with red ware (of unspecified nature).

IAR 1972-3.

Kalyanpura². See **GAMBHIRI VALLEY**.

Kama, Dt Bharatpur. PGW [11.14] site.

IAR 1963-4.

Kamadia, Dt Rajkot. Site with Red Polished Ware [11.23].

IAR 1957-8.

Kamalahatti, Dt Raichur. Megalithic [4.17.8] site.

AR Hyderabad Arch. Dept. 1933-4.

Kamalapur, Dt Dharwar. Megalithic [4.17.8] habitation site.

IAR 1965-6.

Kamalpur, Dt Hardoi. A flat celt of copper was found.

Jour. Asiatic Soc. Bengal, N.S., 11, 1915, p. 4.

Kaman, Dt Bharatpur. PGW [11.14] site.

IAR 1957-8.

Kamarkuli, Dt Bankura. Microliths (of unspecified nature).

IAR 1959-60.

Kamarpal, Dt Mayurbhanj. Middle Palaeolithic [4.3] site. See **KULIANA**.

Kamaspur, Dt Rohtak. Early historical site.

Jour. Haryana Studies, 3, 1, p. 6.

Kamata, Dt Mayurbhanj. See **KULIANA**.

Kamauli, Dt Varanasi. Excavation revealed two Pds: Pd I, red ware, ochrous in appearance and with a tendency to rub off, and parallel-sided chert blades; and Pd II, late historical structures, pottery and other finds. The site is well known for its large yield of Gāhaḍavāla copper-plates, which may be associated with Pd II.

IAR 1963-4.

Kambaduru, Dt Anantapur. Polished stone axes and sherds of the Megalithic Black-and-red [11.15], Rouletted [11.21] and Russet-coated Painted Wares [11.22], besides those of black-painted red ware were found around the lower fringes of a hill known as Durgamkonda.

IAR 1962-3.

Kambalikkaran Coupom, Pondicherry. Megalithic [4.17.9] site

Casal, J.-M., & C., 1956, *Site Urbaine et sites funéraires des Environs de Pondichery-Virampatnam*, Paris.

Kamballu, Dt Mysore. Megalithic [4.17.8] habitation site.

IAR 1963-4.

Kambatti, Dt Nilgiri. Megalithic [4.17.9] barrow yielding pottery with figures on the lids.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Kamble (73°28'; 18°4'), Dt Kolaba. Choppers [4.2] were found at the site situated on the Savitri, e. of MAHAD.

Joshi, R.V., & Bopardikar, B.P., 1972, in *Arch. Congress & Seminar*, Nagpur.

Kamdera, Dt Ranchi. Two flat copper celts [4.11].

Patna Museum collection.

Kamdod, Dt Dharwar. Megalithic [4.17.8] stone circles.

IAR 1960-1.

Kamepalle, Dt Guntur. Port-holed cists [4.17.7].

AI, 4, 1947-8, p. 306.

Kamgar-budrukh, Dt Ahmadnagar. Palaeoliths (of unspecified nature).

IAR 1959-60.

Kamgar-khas, Dt Ahmadnagar. Palaeoliths (of unspecified nature).

IAR 1959-60.

Kamhari, Dt Mirzapur. Black-and-red Ware [11.6] and NBPW [11.16].

IAR 1962-3.

Kammavaripalam, Dt Chingleput. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3]) tools.

IAR 1963-4.

Kampil, Dt Farrukhabad, identified by A. Cunningham with ancient Kāmpilya, capital of s. Pañcāla (*ASI-AR*, 1, p. 255), on an old bed of the Ganga, where Drupada is said to have ruled in the days of the *Mahābhārata*. A small-scale excavation conducted by the Banaras Hindu Univ. under K.K. Sinha in 1976 revealed it to be a single-culture site of the PGW [11.14] complex. The 1.30-2 m deposit yielded, apart from the PGW, the fine grey and red wares, the black-slipped ware [11.13] and a few sherds of the black-and-red ware [11.6.3]. These had all the traditional types of the dish and bowl as identified at HASTINĀPURA, though the number of painted sherds was very limited. It has been observed that the number of painted sherds decreases as one moves e.wards. Other antiquities included discs, terracotta stoppers, copper pins, animal figurines and copper balls. Traces of a mud embankment were noticed in one of the trenches.

A few pieces of NBPW [11.16] were found in section scrapings and cultural remains of the medieval period also occurred sporadically.

Tripathi, V., 1976, *Painted Grey Ware, an Iron Age Culture of n. India*, Delhi.—H.P. RAY.

Kamptee, (21°14'; 79°15'), Dt Nagpur. Stone circles [4.17.6] at Wurree Gaon.

Pearse, G.G., 1869, in *Jour. Ethnological Soc. London*, pp. 207-17.

Kamrej, Dt Surat. Early historical [4.18.2] site with black-and-red ware and copper punch-marked coins [3.1].

IAI 1958-9; 1964-5; 1966-7.

Kamri, Dt E. Nimar. Site with microliths (of unspecified nature).

IAI 1958-9.

Kan valley, Dt Dhule. Early and Late Stone Age (Lower Palaeolithic [4.2] and Mesolithic [4.5]) tools were found at Kabar-Khadak-Pada and near Bhondgaon. Excavation near Bhadue revealed successive layers of gravel, sand and silt. Early, Middle (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) tools were found. The factory sites around Raygad and Ranala yielded late Acheulian to post-Acheulian artefacts consisting of borers, points, scrapers, flake blades and cores.

IAI 1965-6.

Kanadgon, Dt Ahmadnagar. Early historical site.

IAI 1959-60.

Kanagarthi, Dt Karimnagar. Mesolithic [4.5] site.

Gururaja Rao, B.K., ed., 1978, *Decade of Arch. Studies in s. India*, Dharwar, p. 49.

Kanaipur, Dt Birbhum. Microlithic [4.5] site.

IAI 1971-2.

Kanakagiri, Dt Raichur. Chalcolithic [4.14.8] site.

Paddayya, K., 1973, *Investigation into the Neolithic Culture of Shorapur Doab, s. India*, Leiden, fig. 29.

Kanakari, Dt Kottayam. Site with dolmens [4.17.10].

IAI 1963-4.

Kanolda, Dt Dhule. Site with Upper Palaeolithic [4.4] tools.

IAI 1960-1.

Kanamahalli, Dt Kolar. Megalithic stone circles [4.17.8].

IAI 1970-1.

Kanaria, Dt Indore. Microliths in association with black-and-red, black-and-cream and grey wares.

IAI 1958-9, p. 27.

Kanasutaria (22°47'; 72°16'), Dt Ahmadabad. Post-Harappa [4.10] site yielding the Lustrous Red Ware [11.9], red and buff wares of coarse fabric and black-and-red ware. Most of the ceramic types are similar to those of RANGPUR II C and III. From the pottery and stratigraphical evidence it is evident that Kanasutaria came to be occupied very late in the transition phase of the Harappa culture. The occupational debris is completely covered up by loess. Formerly a major river must have flowed near the site, as is borne out by a thick fluvial deposit of sand and gravel.

IAI 1954-5. AI, 18 & 19, 1962 & 1963, p. 188.

Kanaul, **Kannauj**, **Kanoj**; (27°3'; 79°59'), Dt Farrukhabad, the ancient city, variously known as Kanyakubja, Kanyakubja, Mahodaya, Mahodaya, Gadhigura, Gadhinagara, Kusasthala, Kausa, Kausika and Kusumapura (the last according to Hiuen Tsang), situated on the s. bank of the Bhagirathi near the confluence of the Ganga and Kali. The ASI conducted a small-scale excavation at the mound known as Qila in 1955 (IAI 1955-6, p. 19). Prior to that a few stone sculp-

tures—*caturmukha lingas*, Varaha retrieving the Earth, Kalyanasundara-murti, standing Surya and Visvarupa Vishnu standing with Sridevi and Bhudevi, all belonging to the 7th-8th centuries (Ghosh, 1953), and a later dancing Ganesa—had been recovered from the neighbouring regions. Explorations in the early years of this decade have brought to light a treasure of archaeological wealth. The pottery includes the PGW [11.14] represented by the bowl and dish, Black-slipped Ware [11.13], fine as well as coarse red ware and the NBPW [11.16]. Several stone sculptures have been found the prominent of them being those of Parvati, Karttikeya, Surya, Vishnu, Shiva, Ganesa and some Jaina figures datable from the 4th century A.D. to the medieval times.

The terracotta figurines both human and animal are datable from the 3rd century B.C. to the 12th century A.D. A handmade torso of the mother-goddess [12.6] in grey and an elephant bearing the NBPW polish are Mauryan. A plaque depicting Gaja-Lakshmi is in the typical Sunga style, the other figurines of the same period being those of a standing female wearing trefoil head-dress and a plaque depicting a standing Mithuna. A few heads, crude and of coarse fabric, belong to the Kushan period. Naigamesa figures, both male and female, with typical goat-like face and ears, stumpy limbs and the body rendered by incised lines and circlets, are hand-modelled, some specimen with traces of red slip. The female figurines have prominent breasts and are rich in decoration. A few examples in both the forms show a perforated protrusion at the top of the head indicating that they were kept suspended. These figurines are assignable to a date bracket between 450 and 650. Mother-and-child (*ankadhatri*) figurines prepared from a single shallow mould hold the child in the left arm and wear a trefoil head-dress. Another standing female figure in the same style has the left arm resting on the hip. *Dampati* figurines are also made from a shallow mould. Figurines of the standing warriors hold sword in the right hand. All these are dated between 550 and 650.

Other figurines both male and female dated between 650 and 750 include various forms. One group has moulded heads while the rest of the body is handmade. Some of them show traces of red slip and one specimen bears black slip. These present diverse hair styles, the lenticular eyes have round pupils, the elongated ears are applied and the stumpy arms and legs indicate fingers and toes by incised lines. The body bears incised lines and circlets, perhaps indicating garments and the navel. The female forms wear a necklace with pendant marked by double circlets and the girdle is more elaborate. Both types of these figurines have a perforated protrusion at the top of the head while one specimen has two perforations for suspension. The other type of male heads is prepared from a single mould and some of them bear

traces of red slip. A figurine of the type has the head carved with radiating locks of hair in the form of a parasol and the ridge crest at the back, falling in spiral curls on the sides. In a second type the trefoil crest is at the back and the radiating locks of hair in the form of a parasol with a band and the spiral curls falling on the sides. A third type has the hair knotted in the centre with a fillet and the spiral curls being on the side. Still another figurine wears a turban. A plaque shows a lady standing cross-legged, the trefoil hair rendered in the form of two side masses and falling in spiral curls on the sides. Others have a trefoil head-dress, wearing a head ornament perhaps of beads with a rosette in the centre.

Several plaques having both male and female figures or only female ones are dated between 750 and 850. One of them depicts a male holding a sword in his right hand, the left leg is flexed at the knee and resting on the toe. Both the legs of the female are bent at the knee; the left hand rests on the knee while the right hand is kept on the breast. The other plaque depicts a female sitting cross-legged with a peacock on her right. Another plaque shows a lady sitting cross-legged on a swing holding its strings in both the hands, wearing a trefoil head-dress and a rich foliage above. A warrior holding a shield in his left hand also belongs to the same period. The dagger type of human figures is also present.

The other terracotta objects are animal figurines of the horse, bull, birds and rider with kulah cap; skin-rubbers [18.4]; spindle whorls [6.25] with decorated edges; beads of areca-nut shape; a votive tank [12.11]; and moulds of the Śunga and Gupta periods for producing human figurines. An ivory die [6.7.1] and several bone points have also been recovered. All the terracotta figurines and other objects except the stone sculptures recall similar finds from AHICCHATRA (Agrawala, 1947-8), HASTINĀPURA (Lal, 1954 and 1955) and KAUSĀMBI (Sharma, 1960, 1969).

Excavation has revealed a fourfold sequence. Pd I may be dated to c. 1000 B.C. on the basis of the pottery which includes the PGW, Black-slipped Ware and a bulk of red ware both of fine and coarse fabric. The shapes represented are: the bowl, dish, basin, vase and jar. Amongst the other finds are flat terracotta discs [6.7.3]. No structure has been met with.

Pd II is characterized by the find of the NBPW and is hence dated to 600-200 B.C. Black-slipped ware and red-slipped and coarse red wares have also been found, the shapes represented being: the bowl; dish; basin; lid; pan with lug handles; rimless *hāṇḍī*; and vase. Other finds include terracotta figurines and beads in stone and terracotta. A structure of large bricks has been exposed.

Pd III can be divided into seven structural Sub-pds. The structures in general are of burnt brick, but those of rubble have also been found. The pottery is red with a

few pieces of Red Polished Ware [11.23]. The earliest levels yield pottery bearing impressed designs and symbols typical of the Kushan period. The shapes represented are: the bowl, ink-pot [20.2] type of lid; sprinkler; bottle-necked vase; basin; vase; and jar. The terracotta figurines include a male figure prepared from a shallow mould, a moulded head with the hair tied on the top with a knot, crude figurines having pinched face, stumpy limbs and applied breasts and *sattī-sattā* plaques. On the analogy of the similar finds at AHICCHATRA the Pd has been dated from the 1st century A.D. to the late historical period.

Pd IV has seven Sub-pds based on the structures built of *lakhaurī*, some of them in lime mortar and a few also plastered with the same material. Glazed pottery and coarse red and black wares confirm that the levels belong to the late medieval times.

Agrawala, V.S., 1947-8, in *AI*, 4 (for Ahicchatra terracottas); Dikshit, R.K., 1965, *Kannauj*, Lucknow. Ghosh, A., 1953, in *Roop-lekha*, 24, pp. 1-3. Lal, B.B., 1954 & 1955, in *AI*, 10 & 11 (for Hastinapura). Sharma, G.R., 1960, *Excavations at Kausambi (1957-9)*, Allahabad; 1969, *Excavations at Kausambi 1949-50*, Mem. ASI, 74.—J.S. NIGAM

Kanavanapalli, Dt Dharmapuri. Megalithic sites with dolmenoid cists and circle stones [4.17.9].

IAR 1967-8.

Kanchara Bellagallu, Dt Kurnool. Site with neolithic celts [4.6.8].

Foote, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Kanchargatti, Dt Dharwar. Early historical site. See HANDIGNUR.

IAR 1958-9.

Kanchigam, Dt Dadra and Nagar Haveli. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3]) and Neolithic site on the Daman-Ganga.

IAR 1965-6.

Kanchikeri, Dt Bellary. Neolithic [4.6.9] site yielding perforated disc, ring stone and pottery.

Foote, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Kanchipalli, Dt Kurnool. Lower Palaeolithic and Mesolithic [4.2, 5] site.

AI, 6, 1950, p. 69.

Kanchipuram, Conjeevaram (12°50'; 79°75'), headquarters of Dt Chingleput, situated on the n. bank of the Vegavati. It was the capital of the Pallavas and later on the second capital of the Cojas. A type of educational institution called *ghaṭika* flourished here in early times.

Archaeological investigation has been undertaken at the place by different agencies during the last 25 years. The ASI excavated in 1953-4 at Palimedu or Pallavamedu on the outskirts of the city to determine its cultural sequence and chronology (*IAR* 1953-54, p. 12). The excavation revealed four successive structural Pds, the lowest of which contained some fragmentary ring-

wells [14.15] coeval with what purported to be an urn interment [4.17]. A large number of bangle pieces in different stages of manufacture suggest that it might have been a bangle-making factory site. Excavation was resumed by the Dept of Archaeology, Tamil Nadu, in 1970-1 which largely confirmed the above sequence (IAR 1970-1, p. 33).

In 1962-3 the ASI excavated in the premises of the Sri Sankaracharya Mutt of the Kamakoti Pitham in the heart of the city, revealing two different Pds of the site (IAR 1962-3, p. 12). The earliest yielded the Megalithic Black-and-red Ware sherds [11.15] in association with a ware with a bright-red slip. The middle and top levels of the early Pd yielded sherds of the Rouletted Ware [11.21] and local imitations of conical-shaped amphorae [11.19] of a dull-pinkish fabric, comparable with similar ones found at ARIKAMEDU. They belong roughly to the 1st century A.D. Some 15 Sātavāhana copper coins, one of them clearly bearing the name of Rudra Sātakarṇi (2nd century A.D.) were also found in these levels. Among the terracotta figurines were a cult goddess, a royal head, torso of a lady in dancing pose with folded hands, etc. The succeeding Pd which coincided with the times of the Pallavas yielded a quantity of a red ware with a bright-red-slip.

Seven seasons of excavation, from 1970 to 1976, were undertaken by the Dept of Ancient History and Arch., Univ. of Madras, when nearly 20 trenches were laid at different places in the city. The sequence belonged to three Pds: Pd I, c. 300 B.C. to A.D. 100; Pd I A, c. 100 to A.D. 500; Pd II, c. 500 to 1000; and Pd III, c. 1000 to 1500.

The date of Pd I has been fixed on the evidence of the Black-and-red Ware [11.15], all-black ware and the Russet-coated Painted Ware [11.22] being also present. The characteristic pottery of Pd I A consists of amphora jars of a unilateral variety, pieces of the Arretine Ware [11.20], Rouletted Ware, ware with bright-red slip and coarse red ware. To Pd II belong a red-slipped ware, brown-slipped ware and coarse red ware, while Pd III has red-slipped ware of medium to coarse fabric, unslipped red ware and coarse red ware. A number of potsherds with different kinds of graffiti [20.1] which can be grouped into a specific number of symbols have also been found. Among the interesting inscribed potsherds is one in which the legend, in 2nd-century characters, can be read as *Putalasita*, probably the Prakrit name of a Buddhist. ¹⁴C tests of charcoal found just above the natural soil suggest a date around the close of the 3rd century B.C. A brick structure found above this, with two terracotta finials, may suggest that the structure might have been a part of a *caitya*. The bricks used in it resemble those of the Ikṣvāku structures of NAGARJUNAKONDA in size and shape. One of the exposed

structural remains appears to have been the remains of a *stūpa*-like structure. Other notable finds include terracotta coin moulds [3.1] probably of the Sātavāhana period, a few heavily corroded copper coins, terracotta figurines, both human and animal, a *śrīvatsa*, seals, bone objects, arrowheads, points of iron, copper objects, shell bangles and beads of glass, paste and semiprecious stones. The cuttings confirm in a large measure the cultural sequence obtained in the premises of the Sankaracharya Mutt.

—T.V. MAHALINGAM

Kanchi Putta, Dt Srikakulam, Early historical site [4.18.10].

IAR 1971-2.

Kandaiahnapalya, Dt Mysore. Black-and-red [11.15.3] and Russet-coated Painted [11.22] Wares.

IAR 1961-2.

Kandakot, Dt Mirzapur. Immediately to the n. of Kandakot, on the n. bank of a nullah, scrapers and burins were found embedded in the laterite. On the n. side of the hill some palaeoliths [4.2] were discovered. One of the rock-shelters [13] contained scenes painted in two different stages. Another rock-shelter had war scenes of a fairly late period.

IAR 1956-7. Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad, p. 55.

Kandalia, Dt Mayurbhanj. Tools of Series I (Lower Palaeolithic [4.2]) comprising bifacial handaxes, cleavers and scrapers and choppers and chopping-tools of almost all types showing the different techniques of manufacture and stages of technical development were found. Tools of Series II (Middle Palaeolithic [4.3]) included points, scrapers, borers, burins, blades, cores and flakes.

IAR 1958-9.

Kandanakoppal, Dt Mysore. Neolithic [4.6.9] site.

IAR 1958-9.

Kandaniserry, Dt Trichur. Rock-cut Megalithic cave [4.17.10].

AI, 12, 1956, p. 97.

Kandari, Dt Aurangabad. Chalcolithic [4.14.6] site.

IAR 1961-2.

Kandathamvayil, Dt Kozhikode. Megalithic site with urn burials [4.17.10].

Cammiade, L.A., 1930, in *Man*, 30, p. 135.

Kandava dam site, Dt Panch Mahals. Mesolithic [4.2] site.

IAR 1972-3.

Kandhahaj, Dt Thanjavur. Megalithic site containing pyriform urns and associated pottery [11.15.3].

IAR 1955-6.

Kandhali, Dt Wardha. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1959-60.

Kandhra, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) tools and Chalcolithic [4.14.6] habita-

tion site. See SAVALDA.

IAR 1961-2; 1964-5.

Kandila, Dt Gurdaspur. Early historical remains. See ACHAL-SAHEB.

IAR 1961-2.

Kandini, Dt Monghyr. Artefacts of Lower Palaeolithic [4.2], Middle Palaeolithic [4.3] and Mesolithic [4.5] phases were found at three different localities in the vicinity of the village on the bank of a stream of the same name.

Barman, D.K., 1976, in *Arch. Congress & Seminar, 1972*, Kuru-kshetra.

Kandivli, **Khandivli** (19°12; 72°51), Dt Bombay Suburban, in Salsette island, 33 km n. of Bombay, a most significant but somewhat controversial site discovered by Todd who was the first to carry a survey of prehistoric sites in the Konkan (coastal Maharashtra) and collect a number of artefacts from localities stretching from Bombay to as far s. as Jaygad (Todd, 1932). The majority of the implements came from surface sites both slightly inland as well as on coastal promontories and belonged to the Mesolithic [4.5]. From the section of a nullah at Kandivli Todd collected a number of artefacts classified by him as belonging both to the Lower [4.2] and Upper Palaeolithic [4.4] (Todd, 1939). Two decades later Malik wrote a paper re-evaluating the Bombay Palaeolithic industry (Malik, 1957) and subsequently worked on the Stone Age sites and Pleistocene [9.8.2] environment of Dts Bombay and Satara and w. India (Malik, 1959, 1963). Sankalia explored Kandivli and its environs with Zeuner in 1949, with McCown in 1958 and again with Misra and Mohapatra in 1960 (Sankalia, 1962). The present writer who lately worked in this area aimed at a re-examination of the archaeological evidence against the background of more detailed investigations of the stratigraphy and geomorphology of the Konkan during the Late Quaternary [9.8].

The Dahisar river is the only stream of any size that flows through Bombay, others being monsoon ephemeral nullahs that course down from the Padan hills, e. of Kandivli. The sections Todd discovered and described at Kandivli comprise an uneven bed-rock overlain by a gravel, parts of which have become laterized [9.6] and which in other sections is represented by a second clay stratum. An upper gravel or in some parts a rubble deposit overlies this and the topmost levels comprise either a red earth or an upper clay. Todd attributed the deposition of the lower gravel to pluvial conditions and the occurrence of the clay to laterization of the upper part of the lower gravel and to the onset of different climatic conditions, the whole representing alternating wet and dry phases (Todd, 1939). With only minor variations Malik's stratigraphic observations in this area support those of Todd. Zeuner and Sankalia however concluded that the Kandivli sections appeared to represent a

single deposit and not three separate phases of deposition.

The writer's examination (Guzder, 1975) of the Kandivli sections and sections on the Dahisar at Borivli and Dahisar did not reveal a lower bluish-brown clay as a continuous depositional feature. Pockets of mottled bluish and yellowish clay appear to be a product of local deposition and can be observed even today where stagnant water collects in depressions causing chemical alterations of the bed-rock. The writer suggests that initially a major aggradation caused the deposition of a vast sheet of gravel throughout this area. Two stages of down-cutting followed, producing the two terraces on the Dahisar. The Kandivli nullahs exhibit only a single phase of cutting but they are not representative of any significant climatic geomorphic changes and being ephemeral the streams do not allow regional extrapolation. Generally speaking alluvial morphology in the Konkan has not preserved Late Quaternary depositional features indicating a major departure from present-day climatic trends.

The Lower Palaeolithic [4.2] tools first described by Todd consist of handaxes, choppers, massive flakes and scrapers made from basalt, chert and indurated shale. Typologically he equated them with Clactonian, Chellean and Acheulian forms. In his section at Kandivli the Late Acheulian assemblage is succeeded by a blade industry followed by a blade-and-burin industry. Malik discovered evidence for a flake-blade-scraper industry at Borivli and Nala Sopara. At the latter site and at Ghodbunder he found single specimens of handaxes. He agreed with Todd that in Dt Bombay a handaxe culture preceded the flake-blade-scraper industry and was itself succeeded by microlithic industries (Malik, 1963). Sankalia's collection consisted primarily of points, borers and scrapers and he maintained that all the artefacts were made in the form and technique characteristic of the Middle Palaeolithic [4.3] (Sankalia, 1962). Many of Todd's sections at Borivli and Kandivli have now been destroyed. In the early 1970s the writer discovered tools at both localities but only of Middle Palaeolithic forms.

South of Bombay, Palaeolithic assemblages in the Konkan include the writer's discoveries around MALVAN and those of Joshi and Bopardikar, 1972, around MAHAD. In both cases the artefacts are dominated by choppers made on cores and nodules along with flakes, blades, scrapers, etc. The raw material is basalt and quartzite.

Todd's collection, now in the Institute of Arch. in London, was re-examined by N. Isaac (Sankalia, 1962). Significantly only two examples have been described as handaxes. Of Malik's discoveries, one tool is described as a pointed handaxe and the other, from the river bed at Ghodbunder, as an 'extremely rolled' specimen. A close

examination of Todd's illustrations reveals many of his tools as cores bifacially retouched to make choppers and several examples of discoids are characterized by unifacial or bifacial trimming. This is significant because without the so-called handaxes his collection as a whole would appear to be genetically related to the assemblages farther s., so that all the Konkan sites would typologically constitute an integral group.

In the flake-blade-scraper assemblages the Kandivli-Borivli group as well as those farther s. are typologically and technologically similar to the Middle Palaeolithic industries of India. The more specialized tool types—blades, borers, true points—are absent at Malvan, though they have been found n. of Mahad (Joshi and Bopardikar, 1972).

In the absence of any precise stratigraphic or chronometric dating of the Konkan Palaeolithic assemblages one must perforce rely on typology. These artefacts appear to be pre-Mesolithic, a true blade-burin industry being absent. As a whole the artefacts occur as two distinct groups: (1) group dominated by choppers, and (2) a flake-blade-scraper group clearly resembling Middle Palaeolithic industries. The former appears to be earlier than the latter and on the whole has greater affinities with the Lower rather than the Middle Palaeolithic. A chopper discovered on the Manori river occurs in a gravel horizon, which stratigraphically can be correlated with the detrital gravels of the Kasal river ascribed to Late Pleistocene fluvial processes (Guzder, 1975). At Kandivli too it is likely that the deposition of the gravels and silts probably dates to a period of aggradation some time during the Late Pleistocene. The tools of the chopper group exhibit flaking techniques characteristic of the advanced Acheulian cultures of India. The Konkan assemblages may therefore demonstrate a continuation of this tradition and in fact be a relatively late local variant of the Lower Palaeolithic. The Middle Palaeolithic group occurs both stratified as well as on the surface. Wherever stratified the gravels are again associated with Late Pleistocene fluvial processes. In the light of present evidence therefore it is unlikely that the Palaeolithic cultures of the Konkan are much earlier than the Late Pleistocene.

The Bombay microlithic sites can be divided into those found along beaches (MARVE), on coastal promontories (MANORI, ERANGAL POINT, GORAI), further inland along streams (Kandivli, Borivli) and on isolated hills (CHEMBUR, MALAD). Typologically they include geometric and non-geometric forms. They comprise surface material with the exception of Marve and Erangal which have been excavated and the raw material is mainly chert and varieties of crypto-crystalline silica. Beads occur at a number of sites, e.g. Manori, Hog Island, Vehar Lake and Kasu Shoal; Mousterian tools

have been reported associated with the microliths (Todd, 1950). Farther s. microliths have been discovered from river sections and adjoining fields and from the excavations at PACHAD and HATHKAMBA (Joshi and Bopardikar, 1972) where there is a greater variety of geometric forms.

According to Todd and Gordon, 1950, the coastal microlithic assemblage appear to have evolved from the Kandivli industry. Todd dated the Konkan Mesolithic to a period of c. 500 B.C. on the basis of typology and associated material. Gordon correlated Todd's Kandivli stratigraphic sequence with that of Cammiade and Burkitt, 1930, for the lower Godavari region [4.2.5] and suggested a date of c. 8000 to 6000 B.C. for the earliest occurrence of the Bombay Mesolithic cultures. Microlithic industries are known to have a wide spatial and temporal distribution and the Konkan, on the evidence of bottle-glass cores, may have survived well into historical times.

Cammiade, L.A., & Burkitt, M.C., 1930, in *Antiquity*, pp. 327-39. Gordon, D.H., 1950, in *AI*, 6, pp. 64-90. Guzder, S.J., 1975, *Quaternary Environment & Stone Age Cultures of the Konkan, Coastal Maharashtra, India*, unpublished thesis, Univ. of Poona. Joshi, R.V., & Bopardikar, D.P., 1972, in S.B. Deo, ed., *Arch. Congress & Seminar*, Nagpur, pp. 47-57. Malik, S.C., 1957, in *Jour. M.S. Univ. Baroda*, 6, 1, pp. 2-14; 1959, *Stone Age Industries of the Bombay & Satara Dts*, M.S. Univ. Arch. Series, 4, Baroda; 1963, *Studies in the Prehistory of w. India with special reference to Gujarat*, unpublished thesis, M.S. Univ., Baroda. Sankalia, H.D., 1962, in *Jour. Asiatic Soc. Bombay*, N.S., 34-35, 1959-60, pp. 120-31. Todd, K.R.U., 1932, in *Proc. Prehistoric Soc. of East Anglia*, 7, 1, pp. 35-42; 1939, in *Jour. Anthropological Inst.*, 69, pp. 257-72; 1950, in *AI*, 6, pp. 4-17.—S. WADIA.

Kandiyankovil, Dt Coimbatore. Megalithic [4.17.9] site.

Sewell, R., *Antiquarian Remains in the Presidency of Madras*, Madras, p. 218.

Kandluru valley, Dt Nellore. Early Stone Age (Lower Palaeolithic [4.2]) tools were found at Degapudi, Induru and Kalichedu and Early and Middle Stone Age (Middle Palaeolithic [4.3]) tools were recovered from Mudigedu, Pagadalapalli and Veerampalli.

IAIR 1965-6.

Kandra, Dt Ranchi. Late Stone Age (Mesolithic [4.5]) site.

IAIR 1965-6.

Kandukur, Dt Nellore. Abbevillian and Acheulian handaxes [4.2] and Middle Palaeolithic [4.3] and Mesolithic [4.5] tools comprising and flakes.

Foot, R.B., 1916, *Prehistoric & Proto-historic Antiquities*, Madras. Aiyappan, A., 1942, *Manley Collection of Stone Age Tools*, Mem. ASI, 68.

Kandukuru, Kakuturu, Dt Prakasam. Lower, Middle and Upper Palaeolithic [4.2-4] and Neolithic [4.6.8] site yielding Abbevillian and Acheulian handaxes, cores and flakes.

Aiyappan, A., 1942, *Manley Collection of Stone Age Tools*, Mem. ASI, 68.

Kanepalli, Dt Chanda. Early Stone Age (Lower Palaeo-

lithic [4.2]) tools.

IAR 1961-2.

Kaneri, Dt Chandrapur. Late Stone Age (Mesolithic [4.5]) site with microliths.

IAR 1970-1.

Kaneval lake, Dt Kaira. Mesolithic [4.5] site n. of Kaneval. Also a Harappa [4.9] site with a 3 m deposit on the n. side of the lake.

IAR 1972-3.

Kangayam, Dt Coimbatore. Megalithic site with dolmens [4.17.9].

Sewell, R., *Antiquarian Remains in the Presidency of Madras*, Madras.

Kangra (32°6'; 76°16'), Dt Kangra. Lower Palaeolithic [4.2] site situated on a river terrace at the confluence of the rivers Patalganga and BANGANGA. (See following).

AI, 12, 1956, pp. 58-92.

Kangra-Nandru, Dt Kangra. An almond-shaped hand-axe, a rolled ovate and four flakes were obtained from the base of the terrace on which stands the village Nandru at the confluence of the Patalganga and BANGANGA. (See preceding).

IAR 1966-7.

Kangsabati valley, Dt Bankura. Quartzite pebble (Lower Palaeolithic [4.2]) tools. Also a group of five double axes [6.2] of thin copper sheet. See KANKADARA.

IAR 1961-2; 1962-3. Also information from A. Ray.

Kanhathai, Dt Ajmer. Mesolithic [4.5] site.

IAR 1965-6.

Kanheri, Dt Bombay Suburban. Excavation in Cave 25 revealed three occupation levels and furnished evidence in the form of iron ore, furnaces, crucibles and slag to prove that the Buddhist monks living in the caves were engaged in mundane activities such as fashioning of metal objects. Other antiquities included sherds of Red Polished Ware [11.23], an inscribed potsherd, clay sealings of the NALANDA type, fragments of glass bangles, a rectangular terracotta frame perhaps for keeping sealings, coins, etc.

IAR 1969-70.

Kanhi Bhandar, Dt Durg. Megalithic [4.17.6] site.

ASI—AR 1930-4, pp. 77D-B.

Kanhirapuzha, Dt Palghat. Middle Palaeolithic [4.3] industry in the Bharathapuzha basin.

Joshi, R. V., & Rajendran, 1976, in *Bull. Deccan College Res. Inst.*, 35, pp. 51-65.

Kanhiwada, Dt Seoni. Middle Palaeolithic tools [4.3].

IAR 1960-1.

Kaniabe, Dt Kutch. Historical site. See AJMEL.

IAR 1965-6.

Kanigiri Kondalu, Dt Prakasam. Mesolithic [4.5], Neolithic [4.6.10] and Megalithic [4.17.10] site.

IAR 1973-4.

Kaniha, Dt Dhenkanal. Two Neolithic chisels, both of basalt, a fragmentary quartzite ring stone and a few

microliths, comprising mostly small parallel-sided blades and a fluted core, were collected.

IAR 1958-9.

Kanikeri, Dt Bijapur. Site with microliths (of unspecified nature).

IAR 1961-2.

Kanikheri, Dt Sagar. Lower Palaeolithic [4.2] site.

IAR 1964-5.

Kanikkere, Dt Mysore. Megalithic [4.17.8] habitation site.

Information from C. Krishnamurthy through A. Sundara.

Kanikulla, Dt Krimnagar. Prehistoric graves (of unspecified nature).

IAR 1967-8.

Kanimangalam, Dt Trichur. Megalithic urn burial site [4.17.10].

IAR 1967-8.

Kanishpur, Dt Kashmir North. Early historical site [4.18.1].

IAR 1971-2.

Kaniyamundi, Dt Coimbatore. Megalithic site with dolmens [4.17.9].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Kanjatar (20°45'; 70°40'), Dt Amreli. A trial pit sunk in the n.-w. corner of the mound indicated that the occupation deposit was over 2.5 m in depth and that the foot of the mound was silted up. Almost all the Harappa pottery types [11.3] and a few evolved ones in sturdy red and buff wares were encountered.

AI, 18 & 19, 1962 & 1963, p. 181.

Kanjipalli, Dt Coimbatore. Megalithic [4.17.9] site.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras, p. 218.

Kanjirakode, Dt Trichur. Megalithic [4.17.10] site with urn burials.

IAR 1967-8.

Kanjirode¹, Dt Kozhikode. Rock-cut caves, possibly Megalithic [4.17.10].

IAR 1960-1.

Kanjirode², Dt Trichur. Megalithic site with urn burials [4.17.10].

IAR 1967-8.

Kankargol, Dt Raichur. Early historical [4.18.11] site.

IAR 1962-3.

Kankawati, Dt Junagadh. Middle Stone Age (Middle Palaeolithic [4.5]) site.

IAR 1963-4.

Kanker Khera, Dt Morena. Historical site (of unspecified nature).

IAR 1972-3.

Kankershola, Dt Santal Parganas. Microliths (of unspecified nature).

IAR 1963-4.

Kankhoi, Dt Kutch. Historical site. See AJMEL.

IAR 1965-6.

Kankradara, Dt Bankura. Early Stone Age (Lower

Palaeolithic [4.2]) site on the KANGSAVATI yielding early and developed Acheulian handaxes, ovoids, cleavers and pebble tools, as also blade industries (of unspecified nature).

IAR 1960-1; 1965-6; 1968-9.

Kannambakkam, Dt Chingleput. Lower Palaeolithic [4.2] site on the river Arni.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras, p. 149.

Kannavaram, Dt Cannanore. Rock-cut caves, possibly Megalithic [4.18.10].

IAR 1960-1.

Kannekolur, Dt Gulbarga. Mesolithic [4.5] and two Chalcolithic sites [4.18.8] at one of which are remains of an ash-mound [14.3].

Paddayya, K., 1973, *Investigation into the Neolithic Cultures of Shorapur Doab, s. India*, Leiden, p. 10.

Kanniyakumari, Dt Kanniyakumari. Mesolithic [4.5] site.

IAR 1968-9.

Kannoli, Dt Bijapur. Thick coarse grey ware with a negligible proportion of Jorwe Ware [11.11] associated with ribbon flakes [16.15.2] of chert.

IAR 1958-9.

Kannukarur, Dt Dharmapuri. Megalithic [4.17.9] and early historical [4.18.2] sites.

IAR 1966-7.

Kannumbele, Dt Kolar. Megalithic [4.17.8] site with stone circles and pot-holed cists.

IAR 1970-1. Information from C. Krishnamurthy through A. Sundara.

Kanpa, Dt Chanda. Early and Late Stone Age (Lower Palaeolithic [4.2] and Mesolithic [4.5]) site.

IAR 1967-8.

Kanpur, Dt Udaipur. Early historical site yielding a sprinkler and sherds of Red Polished Ware [11.23]. Also a Microlithic site. See BARA BEDLA.

IAR 1956-7.

Kansala, Dt Rohtak. Late Harappa [11.4] and early historical wares were found at Kansala-I (Sehadhara) and Rang Mahal pottery [11.24] at Kansala-II (Bansa ala).

Jour. Haryana Studies, 3, 1, p. 5. Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 125.

Kantabone, Dt Midnapur. Early Stone Age (Lower Palaeolithic [4.2] implements and microliths (of unspecified nature).

IAR 1964-5.

Kantagora, Dt Purulia. Microliths (of unspecified nature).

IAR 1959-60.

Kantapal, Dt Mayurbhanj. Early Stone Age (Lower Palaeolithic [4.2]) tools—Acheulian handaxes, cleavers, choppers, etc.

IAR 1961-2.

Kantaraj, Dt N. Kanara. Megalithic [4.17.8] site.

IAR 1970-1.

Kanthar. See SHIVNA VALLEY.

Kantharia, Dt Ujjain. Early historical site.

IAR 1971-2.

Kanthar-toli, Dt Ranchi. So-called Asura site [14.4].

Kantiyajala, Dt Bharuch. Site with Red Polished Ware [11.23].

IAR 1957-8.

Kanukollu, Dt Krishna. Megalithic Black-and-red Ware and all-black ware [11.15.3].

IAR 1962-3.

Kanumarlupudi, Dt Krishna. Site with dolmens [4.17.7].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Kanvi Siddageri, Dt Dharwar. Megalithic [4.17.8] site.

Progress Rep. Kannada Res. in Bombay State, 1947-52, p. 22.

Kanwa, Dt Deoria. Site with NBPW [11.16] and Buddhist remains.

IAR 1962-3.

Kanwa Khera, Dt Sitapur. NBPW [11.16] site.

IAR 1970-1.

Kanwan, Dt Dhar. Microliths (of unspecified nature) and sherds of black-and-red ware and black-and-grey ware, sometimes painted, as at PRAKASH. Kayatha Ware [11.9] is also reported.

IAR 1956-7; 1957-8. Wakankar, V.S., 1976, in *Arch. Congress & Seminar*, 1972, Kurukshetra.

Kaothe, Dt Dhule. Chalcolithic [4.14.6] habitation site. See SAVALDA.

IAR 1961-2.

Kapadvanj, Dt Kaira. Rich microlithic [4.5] site 18 km off Kapadvanj, with a concentration of tools on an eroded and exposed 6 m wide terrace. Prepared-platform flake tools, cores and a burin, on chocolate-coloured chert and plain and banded agate form the collection.

IAR 1958-9.

Kaparkheda, Dt Dhule. Late Stone Age (Mesolithic [4.5]) tools and Chalcolithic [4.14.6] habitation site, with Chalcolithic burial remains.

IAR 1960-1.

Kapasi, Dt Allahabad. Late Stone Age (Mesolithic [4.5]) and Megalithic [4.17.3] site.

IAR 1963-4.

Kapasi-Kalan, Dt Allahabad. Late Stone Age (Mesolithic [4.5]) site.

IAR 1963-4.

Kapgal hill, Dt Bellary. Pointed-butt polished stone axes.

AI, 4, 1947-8, p. 296.

Kapisha. See CHANDRAPRABHA VALLEY.

Kapnur, Dt Gulbarga. Megalithic [4.17.8] site.

AR, Hyderabad Arch. Dept, 1933-4, p. 7.

Kappalavadi, Dt Dharmapuri. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAR 1965-6.

- Kappatralla**, Dt Kurnool. Neoliths, cores of chert and pottery fragments.
Foote, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.
- Kapre**, Dt Ahmadnagar. Chalcolithic [4.14.6] and early historical [4.16.9], site.
IAR 1959-60.
- Kapur**, Dt Palghat. Megalithic [4.17.8] site with umbrella stones and cist burials.
IAR 1968-9.
- Kara**, Dt Allahabad. NBPW (site same as KARHA).
IAR 1961-2.
- Karad**, Dt Satara. Microliths [of unspecified nature] and painted pottery. Middle Stone Age (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) tools are also reported.
Report on the Excavation at Karad carried out by the Mandal in 1948-9, Bharat Itihasa Samsodhak Mandal, Poona, 1949. IAR 1956-7; 1962-3.
- Karadigudda¹**, Dt Hassan. Lower Palaeolithic [4.2] site.
Seshadri, M., 1956, *Stone-using Cultures of Pre- & Proto-historic Mysore*, London, pp. 15, 23.
- Karadigudda²**, Dt Raichur. Neolithic-Chalcolithic [4.6.9, 4.14.8] and Megalithic [4.17.8] site. Earlier a palaeolith [4.2] had been found.
Jour. Geological Survey of Hyderabad, 3, 1, pp. 76-82 (mentioned as Hardigudda). IAR 1965-6. Foote, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras. *Jour. Karnataka Univ.*, 4, 1968, pp. 91-3.
- Karadiyur**, Dt Salem. Iron implements such as axe-heads, spearheads and blades were excavated from Iron Age (Megalithic? [4.17.9]) graves.
Foote, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.
- Karagur**, Dt Dharmapuri. Megalithic [4.17.9] burial site.
IAR 1969-70.
- Karahal**, Dt Gorakhpur. Black-and-red ware (of unspecified affiliation).
IAR 1963-4.
- Karahra**, Dt Agra. PGW [11.14] site.
IAR 1959-60.
- Karalkadu**, Dt S. Arcot. Trial digging revealed that it was probably an Indo-Roman trading station on the Coromandel coast like ARIKAMEDU from which it is only about 30 km further s. Vestiges of a culture datable to the 1st century A.D. were exposed. A number of beads of semiprecious stones were found. The occurrence of a large number of finished as well as unfinished glass beads, together with an equally large quantity of shapeless vitreous slag, indicates the local manufacture of glass for making beads. Three principal ceramic industries were found: (i) red-slipped ware; (ii) black-and-red ware; and (iii) the Rouletted Ware [11.21]. A number of fragments of the conical-bottomed amphorae [11.19] in coarse red fabric were also met with.
IAR 1966-7.
- Karaiyur**, Dt Pudukkottai. Megalithic [4.17.9] site.
IAR 1959-60.
- Karajgaon**, Dt Ahmadnagar. Series II (Middle Palaeolithic [4.3]) tools and microliths of the Chalcolithic period [4.14.6].
IAR 59-60.
- Karakumukkala hill**, Dt Anantapur. Neolithic [4.6.8] site yielding celts, adzes, chisels, hammers, mullers, corn-crushers, mealing stones, flakes, etc. See AKKAM-MAKONDA.
Foote, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras. IAR 1965-6.
- Karalam**, Dt Trichur. Megalithic [4.17.10] site.
IAR 1966-7.
- Karala-no-Dharo**, Dt Bhavnagar. Early historical [4.18.2] site.
IAR 1972-3.
- Karamangala**, Dt Kolar. Megalithic burial site [4.17.8].
IAR 1969-70.
- Karamnasa valley**, Dt Varanasi. The region between the valleys of the CHANDRAPRABHA and Karamnasa is rich in Megalithic tombs [4.17.3].
IAR 1962-3. Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad, pp. 81, 86.
- Karangarh**, Dt Bhagalpur. NBPW [11.16] along with its associated grey ware.
IAR 1961-2.
- Karanjakupa**, Dt Dhule. Microliths associated with ochre-coloured pottery. See DHAMDAL.
IAR 1959-60.
- Karanpur**, Dt Udaipur. Series III (Mesolithic [4.5]) tools. Lower Palaeolithic [4.2] tools were also found in the Karanpur-ki-nadi valley.
IAR 1959-60; 1962-3.
- Kararia**, Dt Ujjain. Early historical [4.18.7] site.
IAR 1971-2.
- Karaundahia**, Dt Allahabad. Early Stone Age (Lower Palaeolithic [4.2]) factory site.
IAR 1969-70.
- Karaunt**, Dt Varanasi. Sherds of black-and-red ware [11.6.3] Black-slipped Ware [11.13] and red ware.
IAR 1965-6.
- Karchalipur**, Dt Kanpur. Black-and-red Ware [11.6.3], NBPW [11.16] and Black-slipped Ware [11.13].
IAR 1967-8; 1968-69.
- Karda**, Dt Dhule. Chalcolithic [4.14.6] site with microliths and black-painted red and burnished grey wares.
IAR 1962-3.
- Kardhan**, Dt Ambala. PGW [11.14] and NBPW [11.16] site.
IAR 1963-4. Suraj Bhan, 1975, *Excavation at Mitathal and other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 123.
- Karegaon**, Dt Pune. Site with tools of Series II (Middle Palaeolithic [4.3]) and Jorwe Ware [11.11].
IAR 1956-7.
- Karempudi**, Dt Guntur. Lower Palaeolithic [4.2] site near Karempudi on the Naguleru stream, as affluent of

the Krishna. The palaeoliths, mostly rolled, comprised pebble tools and Abbevillian bifaces, developing through the Acheulian to the Levallois stage [16.15].

IAR 1956-7.

Kareta, Dt Jabalpur. Middle Palaeolithic [4.3] site.

IAR 1968-9.

Kargoan, Dt Chandrapur. Early (Lower Palaeolithic [4.2]) and Late Stone Age (Mesolithic [4.5]) sites.

IAR 1970-1.

Karha (25°42'; 81°22'), Dt Allahabad, NBPW [11.16] site. [Same as KARA?].

AI, 10 & 11, 1954 & 1955, p. 144.

Karharbari, Dt Hazaribagh. A hoard of five pieces of smelted copper, three of which were unfinished shouldered celts, was found.

Brown, C.J., 1917, *Catalogue of Prehistoric Antiquities in the Indian Museum at Calcutta*, Simla, pp. 140-2.

Karhibhander. See SORAR.

Karia, Dt Rewa. Pre-pottery microliths (Mesolithic? [4.5]) were collected from the Gorma river.

IAR 1963-4.

Kariakhera, Dt Damoh. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1961-2.

Kariala, Dt Kurukshetra. PGW [11.14] site.

Suraj Bhan, 1976, *Excavation at Mitthal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 124.

Karian (25°45'; 86°3'), Dt Darbhanga, identified with Kālivana, the birth-place of Udayanācārya a philosopher of the 10th century and excavated by V. Mishra on behalf of the K.P. Jayaswal Res. Inst., Patna, in 1955. While the excavation left the question of the identification open it revealed three Pds of occupation. Pd I, of the first six centuries A.D., overlying a deposit of river silt, has wheel-made red ware of coarse to medium fabric including *surāhis*, terracotta animal figurines, skin-rubbers [18.4], beads and cart-wheels, together with a broken brick wall. Pd II, c. 7th to 12th centuries, has predominantly unslipped red and occasionally grey wares, skin-rubbers, balls, dabbers [16.11] and glass bangles and beads and walls of brickbats. Pd III, post-13th century, has unslipped red ware with wash and incisions and such other objects as terracotta animal figurines, skin-rubbers, balls, beads and cart-wheels and glass bangles and beads, largely thrown up by the digging of wells and water reservoirs.

Roy, S.R., 1965, *Karian Excavations 1955*. Patna.

Karibhadar, Dt Durg. Megaliths [4.17.6].

IAR 1972-3.

Karidoddampalayam, Dt Coimbatore. Megalithic cairn circles [4.17.8].

IAR 1962-3.

Karikantangal, Dt N. Arcot. Site with port-holed cists [4.17.8].

AI, 4, 1947-8, p. 306.

Karimba, Dt Palghat. Megalithic [4.17.10] site.

IAR 1969-70.

Karisattan, Dt Tirunelveli. Urn burials [4.17.9].

ASI—AR, 1936-7.

Karivalamvandanallur, Dt Tirunelveli. Megalithic [4.17.9] site.

Man, 30, 3.

Kariwali-1, (29°33'; 74°30'), -2 (29°34'; 74°35'), -3 (29°33'; 74°77'), Dt Hissar. Sites with PGW [11.14], grey ware, Black-slipped Ware [11.13], black-and-red ware, Rang Mahal Ware [11.24] and medieval ware.

IAR 1967-8. Suraj Bhan, 1976, *Excavation at Mitthal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 123.

Kariyapatti, Dt Ramanathapuram. Microlithic tools of the *teri* industry [9.5].

IAR 1961-2.

Karkhup, Dt Monghyr. Tools of Series II (Middle Palaeolithic [4.3]) besides a large number of pieces of iron slag and terracotta crucibles associated with ovens.

IAR 1960-1.

Karla, Dt Pune. Near the Buddhist caves were found a large number of microliths comprising blades, lunates, points and scrapers variously of carnelian, jasper, agate and chalcedony, besides a bead of agate and a few sherds of coarse pottery of ochre-red colour.

IAR 1956-7.

Karlaphad, Dt Nalgonda. Megalithic cairn circles [4.17.7].

IAR 1961-2.

Karli, Dt Dhule. Microliths (of unspecified nature).

IAR 1961-2.

Karnakolajore, Dt Santal Parganas. Microliths (of unspecified nature).

IAR 1963-4.

Karnaui, Dt Hissar. Site with Rang Mahal Ware [11.24].

Silak Ram, 1972, unpublished thesis, Kurukshetra Univ.

Karnisar-1, -2, -3, Dt Ganganagar. Site with Rang Mahal Ware [11.24], terracotta animal figurines, toy wheels, terracotta and carnelian beads, shell bangles, terracotta balls, etc. See SARASVATĪ VALLEY.

Unpublished.

Karnisar Tibba, Dt Ganganagar. Rang Mahal Ware [11.24], shell and faience bangles and a carnelian bead. See SARASVATĪ VALLEY.

Unpublished.

Karognur, Dt Bijapur. Chalcolithic [4.14.8] site. See ALMEL.

IAR 1959-60.

Karoli, Dt E. Nimar. Microliths (of unspecified nature).

IAR 1959-60.

Karontha, Dt Rohtak. PGW [11.14] and Black-slipped Ware [11.13] were found at Karontha-I (Gusai ala) and early historical material at Karontha-II.

Jour. Haryana Studies, 3, 1, p. 5.

Karoti, Dt Ganganagar. An extensive mound yielding pre-Harappa [11.2], Harappa [11.3], early historical and medieval wares, terracotta figurines, gamesmen and

circular cakes [6.27] and coins.

IAR 1972-3.

Karpakala. See SRISAILAM.

Karpara, Dt Chandrapur. Late Stone Age (Mesolithic [4.5]) site with microliths.

IAR 1970-1.

Karpatia, Dt Rewa. 40 rock-shelters [13].

Gupta, J., *Pragaitihāsika Citra-kala*.

Karsola, Dt Jind. Pre-Harappa [4.8] site comparable with SISWAL II. See YAMUNA RIVER.

Suraj Bhan, *Excavation at Mithal & other Explorations in the Sutlej-Yamuna Doab*, Kurukshetra, p. 125.

Karunathara, Dt Trichur. Megalithic [4.17.10] site with urn burials and cists.

IAR 1968-9.

Karungulam, Dt Tirunelveli. Megalithic [4.17.9] site.

ASI-AR 1902-3.

Karuppam-doodi, Dt Dharmapuri. Dolmenoid and port-holed cists [4.17.9].

IAR 1968-9.

Karuppannaswamikoilmedu, Dt Madurai. Stone celts [4.6.10] were found, as also Russet-coated Painted Ware [11.22]. See KOLLANPATRAI.

IAR 1957-8.

Karur, Karuvur, Dt Tiruchchirappalli. Identified with ancient Vāñji or Karuru of Sangam literature, the site has yielded Roman amphorae [11.19], local Rouletted Ware [11.21], a Roman copper coin and Black-and-red Ware [11.15], some with graffiti [20.1].

Champakalakshmi, R., 1975-6, in *Purātattva*, 8, p. 111.

Karusakkulam, Dt Madurai. Megalithic site with large sepulchral urns of terracotta.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Karuvalempatti, Dt Madurai. Microlithic (of unspecified nature) site. A Neolithic [4.6.10] celt and pottery of a late date were also found.

IAR 1960-1.

Karuvanallur, Dt Tirunelveli. Urn burials [4.17.9].

ASI-AR, 1936-7.

Karvi, Dt Banda. Microliths (of unspecified nature).

IAR 1962-3.

Karvikop, Dt Belgaum. Middle Palaeolithic [4.3] site.

Information from A. Sundara.

Karwarkhera, Dt Moradabad. OCW (?) [11.5], red ware of the Śunga-Kushan period and medieval ware.

IAR 1970-1.

Kasal, Dt S. Konkan. Stone Age (Palaeolithic [4.2-4]) site.

Guzder, S., 1977, in *Man & Environment*, 1, p. 5.

Kasaravad, Kasrawad (22°8'; 75°37'), Dt, W. Nimar, the headquarters of a Tahsil of the same name, situated to the n. of Khargone, the District headquarters with which it is connected by a 35 km long metalled road. It is about 5 km s.-s.-w. of MAHESHWAR on the opposite side of the Narmada and on the same side as NAVDATOLI. The ancient site Intbardi, lying 5 km s. of the town, was

excavated by the former Holkar State under the direction of V.N. Singh, Curator of the Indore Museum, during 1936-9. The excavation revealed parts of a dilapidated *stupa* constructed of brick, 50 × 40 cm, along with brickbats in a large number. Some of the bricks are inscribed with peculiar symbols. In addition the excavation yielded broken remains of a drain pipe, fragments of residential blocks, a hall and a reservoir, along with pottery and some other objects, indicating that it was a Buddhist establishment of about the 3rd-2nd centuries B.C. Two earthen storage jars tapering towards the mouth were also exhumed. The larger one, almost intact, is 1.30 m deep and 1.75 m in circumference in the middle; the other, partly broken, shows the depth of 70 cm with an extant height of 1.3 m.

The pottery comprises four main wares—the black-and-red [11.6], red burnished, black burnished and NBPW [11.16] with or without designs. The other finds consist of fragments of saucers, bowls with a small base and *thalis* with flat base. Most of the pieces are small and except in rare cases no two of these can be joined together. Some of the pieces, with two red burnished *surāhis* intact, are inscribed with letters in Brāhmī script of the 2nd-1st centuries B.C., in Prakrit language, showing names of persons of places, such as *Sihila* (Sinhala-Sri Lanka?) and *Takesilie* (*Takṣaśilāyā*=Taxila). One piece is inscribed with the letters *Nigaṭasa viḥāre dipe*. One of the NBPW sherds is inscribed with *da* in Brāhmī, possibly the first letter of the word *dānam* or *dāpitaṃ*.

The other excavated objects are triangular bricks, flat tiles with a hole on the upper side (as excavated at UJJAIN), spindles whorls [6.25], small and round perforated objects and a number of dabbers [16.11].

Silver and copper punch-marked coins and cast copper coins [3.1] and iron objects, such as generally round-headed nails of different lengths, one of them with two handles embossed with the face of a dog, and a few conch-shells and pieces of bones in a small earthen pot are the other finds. The few letters of a worn-out Brāhmī inscription of the 3rd-2nd century B.C. on a stone read *Kasanāgasa putasa* and *pa-putasa*.

Altekar, A.S., 1946, in *Jour. Numismatic Soc. India*, 8, p. 99.
Diskalkar, D.B. 1949, in *Ind. Hist. Quarterly*, 25, p. 1. *Rep. on the Administration of the Holkar State for 1936*, p. 76; 1937, p. 86; 1938, p. 135; 1941, p. 137. 1970, *State Gazetteer*, W. Nimar, Bhopal, p. 443.—H.V. TRIVEDI

Kasare, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1962-3.

Kasarodnala, Dt E. Nimar. Lower Palaeolithic [4.2] site.

Sankalia, H.D., 1974, *Prehistory & Protohistory of India & Pakistan*, Poona, p. 116.

Kashapa, Dt Surat. Mesolithic [4.5] site.

IAR 1966-7; 1967-8.

Kaseri (28°21'; 77°15'), Dt Ghaziabad, located about 2 km n. of Mohan Nagar at the back of village Karela, on the right bank of the Hindon, a tributary of the Yamuna. The site was explored by the ASI in 1964 (*IAR* 1963-4, p. 92) and excavated by the National Museum and Delhi Univ. in 1969-70 (*IAR* 1969-70, p. 43). In all 14 layers revealed six successive Pds ranging from the middle of the 2nd millennium B.C. to the late medieval times.

Pd I yielded a few rolled potsherds of the OCW [11.5] from a 50 cm thick deposit which is not much different from the natural soil. After a gap, in Pd II the site was reoccupied by the users of PGW [11.14] and other associated pottery like the black-and-red ware [11.6.3], Black-slipped Ware [11.13] and plain red wares. The material culture is extremely poor, the antiquities including terracotta beads and balls. In Pd III the wares and associated miscellany of finds of Pd II continue but plain grey ware is also available. Remains of burnt reed-impressed plaster of mud and wattle and daub, generally coated on the huts, have also been found. The next Pd, IV, is marked by a dominant red ware assignable to the early centuries of the Christian era. Some burnt bricks with prominent finger-marks are also encountered. The other antiquities include terracotta animal figurines [17.1], beads and balls. Pd V represents the Gupta and post-Gupta periods. A significant find herein is a terracotta female figurine possibly Lakshmi belonging to Gupta times. The pottery from the post-Gupta times is plain red, sometimes with red slip. Bowls of light-red ware with a flat base and tapering sides are in profusion. Similar bowls have been also noticed from comparable horizons at SONKH, MATHURA and PURANA QILA. Pd VI witnessed a prolific use of medieval red ware.

—K.N. DIKSHIT

Kaserva Khara, Dt Gurgaon. PGW [11.14] and early historical [4.18.1] site.

Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.

Kashil, Dt Satara. Middle and Late Stone Age [4.3, 5] tools.

IAR 1962-3.

Kashipur (28°09'; 78°31'), Dt Nainital, in the *terai* region, with a large polygonal mound engirdled by vegetation covered ramparts, identified by A. Cunningham with Kiu-pi-shwang-na of Hiuen Tsang, which is rendered into Sanskrit as Goviṣāṇa by Julien (*ASI-AR*, 23, p. 252). At its highest point on the n. centre locally known as Bhima-gadā or Bhima-gajā Cunningham traced the thick walls of a large room. In 1939-40 Krishna Deva of the ASI excavated another part of the site and while uncovering some walls also picked up some human and animal terracotta figurines. Subsequently in 1965-6 and 1970-1 the writer once again excavated the Bhima-gadā hump on behalf of the ASI (*IAR* 1965-6, p. 53; 1970-1, p. 45) and exposed a major

part of the remains of a unique massive brick temple.

The original structure, Phase I, apparently consisted only of a lofty platform, 25.55 m e.-w. and 15.03 m n.-s., with two recesses on the e. reducing its width to a 3.08 m wide central projection, which served perhaps as an approach to the top by means of a ramp of flight of steps. The character of the brickwork indicates that this edifice was raised in two stages, the lower height of 3.01 m exhibiting coarse workmanship and the upper extant height of 3 m being an example of neatness and fineness of construction. Not much later the platform was encircled by a 1.85 m wide and 6 m high wall, when the intervening space served as the *pradakṣiṇāpatha* (Phase 2). The path rose gradually level by level one of which is paved with brick. The wall is finely built, with mouldings at the bottom and series of *caitya*-windows, flanked by *pūrṇa-ghaṭa* columns, on the n. and s. Finally in Phase 3 the e. end was widened and another enclosure wall thrown around the extended layout, adding square platforms at the corners, and thus converting the entire complex into temple of *pañcāyatana* order, although all the superstructures of the shrines are now missing. In this phase all spaces between the earlier and latest constructions were filled up with debris and earth, blocking the ornamental facing of the earlier phase. The top was levelled and paved with brick.

The enclosure wall of Phase 3 had three horizontal grooves at different heights punctured at intervals with deep square holes, in each of which was found an iron clamp—a feature that could be seen also on the inside facing. Probably the grooves and the holes contained a framework of wooden planks and beams, which ensured the horizontality and plumb-line finish of a massive brick construction laid in mud mortar particularly because the core of the wall was filled with brickbats laid in courses. The bricks employed in the structures are not uniform and measure 11 × 10 × 7, 22 × 17 × 7 and 60 × 40 × 12 cm.

Ornamental bricks, with cut-work of leaf, flower, lotus, *pūrṇa-ghaṭa* and *kīrti-mukha* motifs, exhibiting Gupta workmanship, found reused in all phases and arrangement of *caitya*-windows on the outer facing suggest a date of 6th-7th century, if not earlier.

A terracotta bulla [6.4], perhaps used as a pendant, shows two human figures as on some Puri-Kushan coins. Copper coins range from those of the Mathura rulers to the 'bull and horseman' type [3.1]. Terracotta human figurines could be compared with those from the last Pd (c. 850-1100) of AHICCHATRĀ. The fillings contained pottery from the PGW [11.14] to early medieval types and some NBPW sherds [11.16] had been picked up earlier from the surface, as also an inscribed stone image of Trivikrama dated to the 13th century and another of the same probable date have been found in the excava-

tion. All things considered, some shrine at the Bhimagadā may have been in use till the 13th century, although the beginnings of the habitation at the site go back to the currency of the PGW.

IAR 1960-1.—Y.D. SHARMA.

Kashtara, Dt Jabalpur. Series I (Lower Palaeolithic [4.2]) tools.

IAR 1958-9.

Kashthadari, Dt Birbhum. Microlithic [4.5] site.

IAR 1971-2.

Kashtra, Dt Jabalpur. Conch-shells embedded in conglomerate were discovered in association with tools of Series I and II (Lower and Middle Palaeolithic [4.2,3]).

IAR 1958-9.

Kasia. See KUŠINAGARA.

Kasithal, Dt Kurukshetra. See SARASVATI VALLEY.

Kasrawad. See KASARAVAD.

Kasuna, Dt Kurukshetra. Grey ware site.

IAR 1966-7.

Kasu shoal. See KANDIVLI.

Kat, Dt Jammu. Late historical pottery and Gupta terracottas.

IAR 1962-3.

Katakunur, Dt Raichur. Megalithic [4.17.8] site with cairn circles.

AR Hyderabad Arch. Dept, 1933-4, p. 7. *Jour. Geological Survey of Hyderabad*, 3, 1, pp. 76-82.

Katakumari, Dt Bankura. Microliths (of unspecified nature).

IAR 1959-60.

Katamadevudu hill, Dt Anantapur. Neolithic [4.6.8] habitation site. See AKKAMMAKONDA.

IAR 1965-6.

Katapalli, Dt Bastar. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2.3]) site.

Jha, V.D., 1976, in *Arch. Congress & Seminar Papers*, 1972, Kurukshetra.

Kataria, Dt Jabalpur. Microliths (of unspecified nature).

IAR 1963-4.

Katarki (16°15'; 75°30'), Dt Bijapur. Lower and Middle Palaeolithic [4.2.3] site. See GHATAPRABHA VALLEY.

Katarpada, Dt Nasik. The site on the Girna yielded Chalcolithic [4.14.6] painted black-on-red pottery and black-and-red ware of the early historical period [4.18.9].

IAR 1958-9.

Katauri, Dt Bulandshahr. PGW [11.14] and plain grey ware.

IAR 1959-60.

Katchnar, Dt Saran. Sherds of black-and-red ware (of unspecified nature).

IAR 1962-3.

Katha, Dt Meerut. PGW [11.14] and NBPW [11.16] sites on the left bank of the Yamuna.

Sharma, R.P., 1976, in *Arch. Congress & Seminar*, 1972, Kurukshetra.

Kathapalli, Dt Chanda. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAR 1961-2.

Kathi-Kunda, Dt Santal Parganas. Tools of Series III (Mesolithic [4.5]) were collected from the bed of the Gumra.

IAR 1960-1.

Kathora, Dt Dhule. Microliths associated with ochre-coloured pottery. See DHAMDAI.

IAR 1957-8.

Kathoti. See 9.2.

Katni, Dt Jabalpur. Two crude Acheulian handaxes [4.2] were found on the n. bank of the Katni river near Hanuman Tekri. On a sandstone hill, 3 km to the w. of Katni, a rock-shelter with a few paintings [13] in white pigment was located.

IAR 1956-7.

Katoria, Dt Bhagalpur. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1961-2.

Katpalon (31°5'; 75°52'), Dt Jullundur, 7 km, e. of Philaur, with a 5m deposit excavated by the writer on behalf of the ASI in 1976-7. In Pd I the PGW [11.14] was found interlocked with the late Harappa pottery [11.4], thus indicating an overlap as at BHAGWANPURA², DADHERI, MANDA and NAGAR¹. Copper antimony rods [18.1] and terracotta beads and wheels are the other main finds. This was followed after a break by Pd II, Kushan. In Pd III, medieval, the strata are much disturbed by pits.

IAR 1963-4. Suraj Bhan, 1975, *Excavation at Muathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 122.—J.P. JOSHI

Katra Bihar, Dt Rajgarh. Painted rock-shelters [13].

IAR 1969-70.

Katragarh, Dt Muzaffarpur, on the w. bank of the Lakhandai, excavated in 1975-6. Two phases of fortification, the earlier one of mud and the later of burnt brick, 50 × 30 × 8 cm, over rammed earth have been detected. A semicircular watch-tower with a diameter of 80 cm has been noticed in the n.-w. corner of the rampart. On the basis of the recovered antiquities, particularly terracotta plaques with male and female figurines with elaborate coiffure, the fortification may be ascribed to the Śunga period.

—B.P. SINHA

Katral, Dt Belgaum. Lower and Middle Palaeolithic [4.2,3] site.

Joshi, R.V., 1955, *Pleistocene Studies in the Malaprabha Basin*, Poona, p. 27. IAR 1972-3.

Kattakampal, Dt Trichur. Rock-cut Megalithic cave [4.17.10].

AI, 12, 1956, p. 104.

Kattalankulam, **Kattalangulam**, Dt Tirunelveli. A *teri* [9.5] site with retouched flakes, blades, discoids, lunates, points, etc.

AI, 12, 1956, p. 12.

Katteri, Dt Nilgiri. Megalithic [4.17.9] site with stone circles yielding a large find of iron weapons.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Kattumannargudi, Dt S. Arcot. Megalithic [4.17.9] site containing pyriform urns and associated pottery.

IAR 1955-6.

Kattuputtur, Dt Tiruchchirappalli. Megalithic [4.17.9] Black-and-red Ware and urns.

IAR 1963-4.

Katurnadi, Dt Chittoor. Lower and Upper Palaeolithic [4.2, 4] site.

IAR 1967-8. Sankalia, H.D., 1974, *Prehistory & Protohistory of India & Pakistan*, Poona, p. 62.

Katwar, Dt Jaunpur. Mound with remains of brick structures, red ware and copper coin of the Kushan dynasty.

IAR 1965-6.

Kaulakhedi, Dt Saharanpur. PGW [11.14] site.

IAR 1965-6.

Kaulgarh, Dt Hissar. PGW [11.14] site.

IAR 1966-7.

Kauli, Dt Patiala. PGW [11.14] site.

IAR 1968-9.

Kaundinyapura, **Kundinpur**, (22°55'; 78°05'), Dt Amravati located on the w. bank of the Wardha, a place finding mention in ancient literature and supposed to be the capital of Vidarbha. According to the epic legend Rukmiṇī the daughter of king Bhaismaka of Kaundinyapura eloped with Kṛṣṇa from here. The place is also associated with the Nala-Damayanti story of the *Mahābhārata*. The site was reported in 1928 by A.R. Deshpande and the antiquities were examined in 1936 by K.N. Dikshit. (Lower and Middle Palaeolithic tools [4.2.3] are also reported, IAR 1958-9). It was excavated by M.G. Dikshit in 1962 and 1964. The excavation revealed a sequence of six Pds, of which the first is Megalithic [4.17.6]. It is characterized by the typical Black-and-red Ware [11.15.2] sometimes with post-firing graffiti and etched carnelian beads of which a tablet bead with radial strokes around the margin has definite s. Indian Megalithic association. The excavator did not provide a time-bracket for this Pd in view of the controversy over the chronology of megaliths prevailing at that time. However it can now be dated on the basis of ¹⁴C determinations from TAKALGHAT and KHAPA in adjoining Dt Nagpur to c. 750 to 500 B.C. The Black-and-red Ware also continues in Pd II which, according to the excavator, is pre-Mauryan.

Pd III (c. 300 to 100 B.C.) is marked by the occurrence of the NBPW [11.16] and punch-marked coins [3.1], both of which have been roundly assigned to the Mauryan age; hence the Pd has been labelled as Mauryan. The associated wares are non-descript. But the ear ornaments constitute a distinguishing feature of this Pd;

they are spools of polished jasper, glass and even of terracotta and can be identified as the *tātanka-cakras* referred to in literature.

Pd IV (c. 150 B.C. to A.D. 200) is labelled as Sātavāhana on the basis of the occurrence of Sātavāhana coins. Along with a coarse red ware the Red Polished Ware [11.23] also occurs, the latter represented by a number of sprinklers. Also present is a variety of lids and jar covers. A few sherds of a black-painted ware, which is said to occur between the Mauryan and also Sātavāhana periods, are comparable with the RANG MAHAL painted ware of w. India [11.24]. A solitary sherd of the Russet-coated Painted Ware [11.22], common in the lower Deccan, is also reported. Most of the beads are of carnelian, the remaining ones being of other semiprecious stones, glass, etc. Interesting is a small tortoise-shaped amulet of faience of fine workmanship. Brick-lined soakage wells belong to this Pd.

The succeeding Pd IV, styled as the late Sātavāhana, (c. A.D. 200-50), only marks the deterioration of the preceding phase. It is represented by one layer only and was obviously therefore of short duration. To this Pd belong some terracotta votive tanks [12.11]. The excavator is of the opinion that the habitation of the succeeding epochs of the Vākātakas, Rāṣṭrakūṭas and others was probably represented at the site but was destroyed in medieval times (Pd VI) when the site was levelled down for occupation. This last Pd, late medieval, is characterized by houses built of large boulders and having lime floors. Besides a few Muslim coins, the cultural data for this Pd are very meagre, the only interesting object being a potsherd bearing the impression of a maize cob which, along with the prehistoric maize from Java, constitutes the only example of the pre-Columbian occurrence of maize in the Old World (2.2.7).

Dikshit, M.G., 1968, *Excavations at Kaundinyapura*, Bombay.—M.K. DHAVALIKAR

Kaurara-Buzurg, Dt Mainpuri. PGW [11.14] and NBPW [11.16] site.

IAR 1961-2.

Kauriganj, Dt Aligarh. Mound on the river Kali yielding PGW [11.14], plain grey ware, Black-slipped Ware [11.13], and black-and-red and plain red wares, the last-mentioned containing Śunga-Kushan shapes. Sherds of the OCW [11.15] were picked up from a field about 450 m of the mound.

IAR 1965-6.

Kaurihar, Dt Varanasi. Microliths (of unspecified nature). Also Megalithic [4.17.3] habitation site.

IAR 1962-3.

Kaurolī, Dt Bijapur. Coarse red-slipped ware, Russet-coated Painted Ware [11.22] and Red Polished Ware [11.23].

IAR 1958-9.

Kausāmbi (25°20'; 81°23'), Dt Allahabad, 51.5 km s.-w. of Allahabad, on the bank of the Yamuna, its enormous ruins spread over several villages, two of them, Kosam-Inam and Kosam-Khiraj, still reminders of the ancient name of the city the remains of which they bear. According to the epics Kausāmbi was founded by king Kuśāmba, and according to the Purāṇas king Nicakṣu, a descendant of the Pāṇḍavas, came to live here when HASTINĀ-PURA was washed away by the Ganga. At the time of Buddha it was the capital of the *janapada* of the Vatsas and was ruled over by Udayana, whose romantic episodes and marriage with Vāsavadattā the daughter of Pradyota of Avanti form the theme of many Sanskrit works. According to Buddhist literature including the accounts of Hiuen Tsang it was visited by Buddha. The inscription of Aśoka on the Allahabad pillar, which according to some had originally been set up at Kausāmbi itself, shows that Kausāmbi was the headquarters of one of his *mahā-mātras*. Situated on the Yamuna and distantly overlooked by the Vindhya to its s., Kausāmbi lay on many highways, including some leading to the Deccan.

The sprawling ruins with a chain of rolling mounds and with a pillar believed to be one of those of Aśoka in their midst were first recognized by A. Cunningham to represent ancient Kausāmbi (ASI—AR, 1, p. 306). Even on the surface thousands of coins, terracotta figurines and other antiquities including stone sculptures have been collected from time to time and have enriched by many museums. The ruins are enclosed by an impressive rampart with an average height of 10.6 m above the surrounding field-level, its bastions rising much greater heights, 21.3 to 22.9 m and with the shape of a quadrilateral of about 6.4 km perimeter, the measurements of the four side being as follows: n. 1584m; s. 1822m; e. 1795m; and w. 1249m. The latest habitation debris rises to the top of the ruined rampart.

In 1937-8 N.G. Majumdar of the ASI excavated a small area near the pillar, but the results were not published. Extensive excavations were undertaken by the Univ. of Allahabad under G.R. Sharma and his assistants from 1949-50 to 1966-7 (IAR 1953-54, p. 9; 1954-5, p. 16; 1955-6, p. 20; 1956-7, p. 28; 1958-9, p. 46; 1959-60, p. 46; 1960-1, p. 33; 1961-2, p. 50; 1962-3, p. 32; 1963-4, p. 40; 1966-7, p. 38), the excavations being conducted in four main areas: (1) the pillar area adjacent to the ASI excavation, (2) the defence complex, (3) the Ghosītārāma area, and (4) the palace complex. In the pillar area, the first to be excavated, three Pds were distinguished. Pd I pre-dated the advent of the NBPW [11.16] and Pds II and III respectively saw its appearance and disappearance, Pd II being separated from Pd I, marked by the presence of only a few sherds of the PGW [11.14], by a thick sterile layer. There were no brick

structures in the early levels of Pd II, the NBPW appearing from its very start. Uninscribed cast coins [3.1] made their appearance with the earliest brick structures and a road, assigned to c. 300 B.C., and shortly after that were coins of the 'lanky bull' type, typical of Kausāmbi. In Pd III, c. 175 B.C. to A.D. 325, were coins of the Mitra rulers such as Brhaspatimitra, Sūramitra, Prajāpatimitra and Rajanimitra, followed by those of the Kushans and the Maghas, the latter continuing to c. A.D. 250. In c. 350 appeared coins of Gaṇendra, identified with Gaṇapati-nāga, who was ousted by Samudragupta. The road which had its origin in Pd II continued up to c. 300. Habitation in this area ceased in c. 400.

Subsequent excavation, particularly in the defence area, has materially altered the picture, and the excavator has identified four Pds, respectively dated 1165 to 885 B.C., 885 to 605 B.C., 605 to 45 B.C., and 45 B.C. to A.D. 580. In other words his former Pds I to III have to be regarded as Pds II to IV: Pd I pre-dated the PGW. (For comments on the chronology see below.)

The ceramics of Pd I coming mainly from the earliest levels of the defences are extremely diminutive and fragmentary. Comparison with the pottery from the OCW [11.5] levels of ATRANJIKHERA, though revealing a wide difference, shows at least three shapes common to both. The pottery of Pd II, from the later strata of the defences and the lowest levels of the palace area, consists of red, grey-to-buff, black and black-and-red wares. The red ware is wheel-made, sturdy and of well-levigated clay. It has a bright-red slip and the core is orange-red. Some sherds bear black paintings on the rim and outer side. The shapes are the bowl dish, bowl-cum-basin and dish-on-stand. The grey-to-buff ware is also sturdy, some being black-slipped on the smooth outer surface, with occasional paintings. Not much can be said about the black ware which is mostly fragmentary. The black-and-red ware, on the other hand, is turned on slow wheel and is ill-fired coarse with large quantities of rough organic material and small stone particles in the clay, some specimens bearing white paintings on the black-slipped surface. Typological analysis of the pottery of this Pd shows, according to the excavator, similarity with that of a motley of sites like NAVDATOLI III, RANGPUR II C, LOTHAL II, MEHGAON, SOMNATH, MOTAMACHIALA, etc., and several sites in the Ganga valley. The excavator however significantly notes that whereas these are pre-Iron Age sites, at Kausāmbi the corresponding pottery is associated with iron, but the analogies show the early origin of Kausāmbi and its contacts with the Chalcolithic cultures of c. and w. India [4.14.5, 6] and Harappa [4.9] tradition.

The PGW is represented in Pds II and III, associated with which is the Black-slipped Ware [11.13]. The painted designs on the former comprise horizontal

bands, groups of vertical and slanting strokes, loops, circles, dots and circles of dots, in some cases in deep-chocolate or yellow on brownish-red surface. Though comparable with the PGW of HASTINĀPURA and ROPAR, it admittedly belongs to a late stage. Many red ware types associated elsewhere with the PGW also occur. The associated black-and-red ware, said to have similarity in fabric, texture and types with that from ATRANJIKHERA III, CHIRAND I A and B and SONPUR I A and B, have groups of lines painted in deep-black pigment, the designs being dots and circles of dots, besides bearing incised horizontal grooves filled with white.

The NBPW appears in profusion in Pd III and has several shades—steel-grey, black, chocolate, orange and golden. Some of the earliest specimens are painted with bands on the rim and oblique lines, arches, triangles and a complex motif in chocolate. The bowl and dish are the common shapes. The lid, vase and carinated *hāṇḍī* are the other shapes. The PGW continued in this Pd but is coarser. The red ware, normally red-slipped, contains straw, husk and sand in the core.

The NBPW disappears completely in Pd IV, its place being taken by a finely finished and well-fired red ware. In the later levels of the Pd a chocolate-slipped ware emerges. According to the excavator 'most of the types were evolved in n.-w. India under Śaka-Parthian impact and were introduced into the plains of n. India by the Śaka-Parthian Kushans. A comparison of the Kauśāmbī material with that particularly from sites in Soviet c. Asia shows contacts of c. Asia with Kauśāmbī. Such pottery is divided into: Early Group, 500 to 200 B.C., and Late Groups II A and II B, 200 B.C. to 4th century A.D., and Late Group III. In the early group is the 'cylinder-conical' pottery, in the Late group II A and II B are goblets with footed/flat base and shapes showing a fusion of Early Group I and Late Group II A. To Late Group III belong the *surāhi* and *enohoya*.

In the pillar area evidence for the existence of structures in Pds I and II was lacking. In the PGW levels structural activities were attested by post-holes, wood remains and some vestiges of earthen floors. The lower part of the NBPW levels was devoid of burnt-brick structures but there were vestiges of mud or mud-block walls, earthen floors and ring-wells [14, 15]. Burnt-brick structures appeared in the upper part of the Pd. Thenceforth there was a spurt in building activities, of which the first two belonged to this Pd and the later six to the next. Brick walls, terracotta drains, ring-wells, floors of brick concrete laid in mud, tanks of brickbats and later on of bricks set in lime mortar and brick drains, proliferated. The size of bricks ranged from 35 to 48 cm in length, 17.7 to 30.4 cm in width and 5.6 to 7.6 cm in thickness. In general the houses were either along the

cardinal directions, but there were deviations in later times. The main doors were 1.14 to 1.44 m wide and the subsidiary ones 76 cm. The houses consisted of several rooms on all sides of a central courtyard. Some houses were also provided with separate apartments for womenfolk. Sanitary and waste-disposal arrangements consisted of brick drains or pottery pipes, ring-wells and soakage jars, single or multiple, placed in a cylindrical pit, their bottoms perforated. Mention has been made of above of a road: it was built with the earliest baked-brick structures and continued till the end of habitation in the area with successive rises in its level.

The encompassing rampart referred to above, with salients and bastions at regular intervals, had five main gateways, two each on the n. and e. and one on the w. and six subsidiary ones. The one on the w. was located at 'the apex of a triangle formed by two salients, the s. one measuring 472.4 m and the n. 594.3 m, the base of the triangle being 777.2 m. A bund measuring 106.6 in length and 27.4 m in width in front of the e. gateway was perhaps a curtain. The space between this and the rampart, 7.6 m in width, was a passage. A tower 83.8 m away from the tail of the bund and on the other side of the moat (see below) together with two others on top of the rampart commanding the outer tower provided extra strategic cover to the e. gateway. The command towers of the n. gateway were simpler on plan. Entry through the gateways was further restricted by a complex of guard rooms and re-entrants. A moat of varying width encircled the rampart. In addition there was a reservoir with a 3.96 m high bank on the s. and the e. of the watch-tower and the road leading to the e. gateway. A 21.3 m wide channel between the e. gateway and the watch-tower separated the road into two. This channel was crossed by a sort of drawbridge or overbridge as evidenced by two conical pits, possibly indicators of the once-implanted heavy anchoring posts of the bridge at the ends of the roads. The channel was connected with the reservoir to the e. of the tower and also at the foot of the rampart on the n. side. During emergency water from the reservoir would inundate the area between the roads and the watch-towers, converting the whole area into a broad sheet of water, thereby extending the width of the moat to its maximum of 146 m. The sides of the moat were strengthened by brick-built battered revetments, of which two phases could be seen.

A section of the rampart itself was excavated. Constructed of compact well-rammed clay cut out of the natural soil, it was, according to the excavator, erected in the last decades of the 2nd millennium B.C. From the very beginning it was provided with a burnt-brick revetment with a prominent inward batter, 15° up to the first 30 courses and 40° thereafter. It was 2.75 m thick at the base and had an extant height of 12.13 m with 151

courses, coated with a thick plaster of lime and mud. Some time between 955 and 885 B.C., due to seepage of water causing bulge, seven weep-holes at regular intervals at an approximate height of 91 cm from the base were provided and seepage water was drained into circular pits cut into the natural soil. In the third phase, 675 to 605 B.C., major repairs were carried out: the height of the rampart was raised to a further height of 2.43 m with mud blocks topped by sandy earth mixed with *kankar* nodules. Between 605-535 B.C. the rampart and the brick revetment were further heightened by another 91 cm. The next phase, 535-465 B.C., saw another heightening and the erection of a secondary rampart. At the w. end came up a bastion, 2.43×1.82 m. A corbelled drain, wrongly identified as a passage, with slits on either end and two man-holes were constructed in 465-395 B.C. A renewed heightening and the erection of guard rooms took place between 325 and 255 B.C., this phase coming to an end with a conflagration. The next phase, 185-125 B.C., saw a further heightening and construction of a complex of guard rooms, flank walls and towers. Heightenings went on till the last phase, when the Hūnas destroyed the whole complex. Five successive road levels leading to the rampart were identified. (The dates of the different phases will be examined later on.)

Outside the excavated section of the rampart was an enclosed space formed by the revetment and a return wall meeting at a point closely in alignment with the spine of an altar of the shape of a flying bird with its face to the s.-e. The head, body, wings and tail of the 'bird' were laid in bricks on a specially prepared ground. The shoulders were slightly raised and the head and tail tapered a little. The half-spread right wing had a natural curve. Only the vestiges of the left wing, head and body were available. According to the excavator the altar was utilized for the performance of a human sacrifice (*puruṣa-medha*) as elaborated in the Brāhmaṇa literature. The sacrifice is believed to have been performed by the founder of the Mitra dynasty whose coins were recovered in abundance from the corresponding levels.

Within the walled city was a monastic complex rectangular on plan, entered through a gate. It has been identified on inscriptional evidence with the Ghoṣitārāma monastery, the nucleus of which was laid by the Buddha's disciple Ghoṣita. Immediately on entering it one would find cells for monks. Beyond this was a cloistered veranda. The main *stūpa* was a massive structures, square on plan with doubly recessed corners. There were also two subsidiary *stūpas*, a shrine of Hārīti and an apsidal structure flanked by two *stūpas* at the entrance, not to speak of several smaller ones which were probably memorials to the monks who once lived in the *vihāra*. The complex showed 16 phases of structural activity, the earliest one probably dating back

to the 5th century B.C. In the third phase important additions seem to have been made by Aśoka. The cells and the inner veranda came up in the eighth phase. The maximum building activity took place during the times of the Maghas, particularly Bhadrāmāgha. The boundary wall was erected in the 13th phase. The monastery met its end with the Hūnas.

In the s.-w. corner of the fortified area a palace complex was identified on the bank of the Yamuna. The complex occupied an area measuring 315×150 m and was indicated on the surface by a widespread scatter of large and small stones, stone fragments and lumps of lime plaster. Two prominent elevations within the complex represented strongly built towers. The walls enclosing the complex were of stone set in lime mortar, the n. one measuring 130 m in length and 6 m in width. The palace was built on a podium 2.5 m high made of mud and mud bricks. During the period of the currency of the NBPW the palace was protected by a dry moat on the outer side of its n. boundary.

The structural development of the complex could be divided into three phases on the evidence of building materials and finish. In the first phase the palace was a random-rubble construction, perhaps with a plastered face. In the middle phase dressed stones measuring $66 \times 53 \times 23$ cm were used for the wall face but the core remained the same. In the last phase, following a conflagration, the walls had a brick core veneered with dressed stones. The corner towers were enlarged and rebuilt. Many were the buildings within the complex. Opposite the central tower was a hall with a room on either side. The flooring was of lime and the walls were plastered with the same material. A flight of steps led up the tower from the hall. A drain of dressed stones, 86 cm deep and 45 cm wide, pertained to the second phase. The final phase saw a vigorous building activity. The complex now comprised three blocks with two galleries running n.-s. The doors of each block were identical in alignment with each other. The audience hall, 11.50×3.42 m was in the central block and was interconnected with rooms. In the last subphase of this phase a network of underground chambers came into being. The superstructures were arched.

The complex is believed to have originated in the 8th century B.C. and the third phase culminated towards the end of the 3rd century A.D. But occupation in the area continued for three more centuries.

Kauśāmbi has produced a unique mass of datable antiquities of the later periods. A number of coins—punch-marked, uninscribed and inscribed cast [3.1]—were found in the excavations, not to speak of the vast surface collection. The earliest occurrence of an uninscribed cast coin was observed in a layer dated by the excavator to the 9th century B.C. Cast coins continued

till the end of the 1st century B.C. The Kauśāmbī 'lanky bull' type occurred from about the end of the fourth century A.D. Punch-marked coins, four of silver and three of copper, came from levels datable to 535 to 185 B.C. The coins of the Maghas help in establishing the succession of the rulers of that dynasty. There were also coins of the Mitras, Kushans and Nāgas, and the names of some rulers have come to be known for the first time. Significant also are some seals and sealings. The earlier ones bear only symbols and no names. The first seal with a legend *Dutaka* belonged to the 2nd century B.C. An important sealing, rectangular in shape, was of Kaniska and of special significance are the seals of Toramāṇa and Hūnarāja from the latest levels of occupation.

The terracottas of Kauśāmbī have a special place in the history of clay art of India. On the basis of manufacturing technique they can be grouped into (1) early handmade, (2) moulded and (3) later partly hand-modelled and partly moulded. The first group has grey and dull-red pieces, sometimes with applied decorations. The second group, of the 2nd-1st century B.C., represents 'conceptional rather than realistic' portrayal of figures and reflects the traits of contemporary art in dress, ornamentation, etc. The third group, in the round, recalls the features of contemporary Kushan art, particularly in facial features. Important are those with elaborate decorations, mother goddesses, reclining women, dancers and drummers with peaked caps indicating Śaka-Parthian influence. The handmade-cum-moulded plaques share the features of their counterparts from the early historical levels of other sites, such as MATHURA, AHICCHATRĀ, TAMLUK, etc. Votive tanks [12.11] as usual belong to the early centuries of the Christian era.

Equally prolific are the other classes of antiquities: styli [20.5] or arrowheads of ivory, horn and bone, bangles of shell, stone, copper, glass and terracotta; terracotta gamesmen; finger and nose rings of copper; ivory stands; stone toilet caskets [18.2]; etched and plain beads of semiprecious stones, as also of shell, bone, copper, gold and terracotta. Iron appeared from the very beginning and proliferated during the NBPW period. Iron arrowheads [19.3.1] were of 11 types, based on shape and cross-section. Out of them eight types occurred throughout, the remaining three—double-tanged, three-bladed and barbed-bladed—being intrusions in the last centuries before and early centuries of the Christian era.

The chronology of the later—NBPW and post-NBPW—levels of the pillar area of Kauśāmbī is unassailable as it is based on datable coins and seals, fortified by ¹⁴C dates of the NBPW levels, of which a large number ranging from 500 to 200 B.C., are available (Agrawal and Kusumgar, 1974, p. 138). As the levels

from the NBPW period down to the desertion of the site as a result of the depredation of the Hūnas have each an average duration of 70 years, the excavator, in computing the dates of the pre-NBPW levels, i.e. his Pds I to III, has evidently given the same duration of 70 years to each phase of repairs and restoration of the defences and has arrived at the dates given above for the successive phases of the defences. This method and the results of application thereof are not unquestionable. Some of the repairs and alterations to the defences, such as the provision of weep-holes and construction of guard-rooms, could easily have taken a much shorter time—even one year would have sufficed. One is left with the feeling that the dates have been arrived at too mechanically. The occurrence of the PGW, admittedly of the later variety, in Pd III is of little significance as we now know that the PGW in its later stages was coeval with the NBPW and therefore does not necessarily justify an early first millennium B.C. dating. The analogy of a miscellany of pottery from sites of different regions and cultures does not carry conviction, particularly in the absence of any diagnostic ceramics like the Malwa Ware [11.10]. Any lingering of the Harappa tradition in the brick revetment of the Kauśāmbī rampart is equally unconvincing, as at least seven centuries (even admitting an early 1st millennium dating of the Kauśāmbī defences) intervened between the two, with no connecting links. The occurrence of an uninscribed cast coin in 900 B.C. at Kauśāmbī, according to the excavator's datings, would unjustifiably revolutionize the world history of coined money.

Taking all this into consideration, one is left with the feeling that the origins of Kauśāmbī, particularly the defences thereof, were not as old as the excavator's reports would have us believe (Ghosh, 1973; Sinha, 1974; Lal, 1979).

Agrawal, D.P., & Kusumgar, S., 1974, *Prehistoric Chronology & Radiocarbon Dating*, New Delhi. Ghosh, A., 1973, *City in Early Historical India*, Simla. Lal, 1979, in *International Seminar on the Indus Civilization*, Simla (unpublished). Ramachandran, K.S., 1978, in *Jour. Andhra Hist. Res. Soc.*, 37, pp. 193-200. Sharma, G.R., 1969, *Excavations at Kauśāmbī 1949-50*, Mem. ASI, 74; 1958, in *Annual Bibliography of Indian Arch.*, 16, Leiden, pp. xli-xlv; 1960, *Excavations at Kauśāmbī 1957-59*, Allahabad. Sinha, K.K., 1973, in *Radiocarbon & Indian Arch.*, Bombay, pp. 231-8.—K.S. RAMACHANDRAN

Kausan, Dt Aurangabad. Early historical site [4.18.9].
LAR 1965-6.

Kaustuwa-ka-kot, Dt Ghazipur. Black-and-red ware (of unspecified nature).
LAR 1963-4.

Kautal, Dt Raichur. Pointed-butt polished stone axes.
AI, 4, 1947-8, p. 296.

Kavalagiriyanahalli, Dt Kolar. Megalithic [4.17.8] site with stone circles.

Information from C. Krishnamurthy through A. Sundara.

Kavali, Dt Nellore. Lower [4.2] and Middle Palaeolithic

[4.3] site in the Pennar valley.

IAR 1965-6.

Kavassery, Dt Palghat. Megalithic [4.17.10] site.

IAR 1969-70.

Kāveripūmpattinam, **Kāveripattinam**, **Pūmpuhār**, Dt Thanjavur, the port city of the early Coḷas, now an insignificant fishermen's hamlet on the e. coast of Tamil Nadu, where the Kaveri joins the Bay of Bengal. Famed in early Tamil works like the *Śilappadikāram*, the *Maṇimekalai* and the *Paṭṭinappalai*, for its commerce, planned layout, mansions, etc., and as the residence of Yavana merchants and artisans from places like Ujjani, it is also said to have had temples of Śiva, Viṣṇu, Balarāma and Muruga as well as Jaina and Buddhist monasteries. The foreign notices on Kāveripūmpattinam are illuminating. There is reference in the *Periplus* to the two capitals of the Coḷas, one in the inland region called Argaru (Uraiyūr) and 'the coast country which lies on the bay', the latter obviously referring to this port city. Ptolemy more specifically refers to the city as the Kabiris Emporium. It is also known in Pāli literature. But the great city, according to the *Maṇimekalai*, was destroyed by the sea during the time of the Coḷa king Illem Killi. Though this event is ascribed to a supernatural incident it may be taken as an echo of some actual sea erosion or high tidal wave that lashed a part of the city. But apparently the entire city was not lost, for it was in a good state even in the 5th century, when Buddhādatta, a Buddhist scholar and poet, stayed in a *vihāra* here and gives a glowing description of the city and its bazars. In the 7th century two *Tēvaram* hymnners mention two suburbs as Kāveripūmpattinathu Pallavaneśvaram and Pūhar-Sayakkade, the latter a clear reference to the parent town Pūhar. Inscriptions of the 11th and 12th centuries also mention Kāveripattinam. (Sastri, 1955, for literary and epigraphical references.)

Exploration and excavation conducted by the ASI from 1962 to 1967 (IAR 1963-4, p. 20; 1964-5, p. 21; 1965-6, p. 24; 1966-7, p. 21) have clearly established that in spite of the constant fight between the land and the sea the ancient city had not been fully engulfed and at least a few portions of it still lie buried. Surface exploration on the beach has revealed the vestiges of ancient habitations like ring-wells [14.15], pottery, brickbats and beads strewn about the place. Some brick structures and a few ring-wells are covered with sand. Habitation sites, going back to the time when the city was at the zenith of its glory, have been plotted at places like Vanagiri, Neidavasal and Killiyur. Square copper coins bearing the royal crest of the Coḷas, viz., the tiger on one side and the elephant on the other, sherds of the Black-and-red Ware [11.15] and beads of semiprecious stones are found on the surface. The Rouletted Ware [11.21] of both grey and black fabric also occurs. A Roman coin has been found at the site called Vallaiyan Iruppu. Sev-

eral beautiful terracotta figurines have been discovered at places like Malapperumpallam.

Excavation at three places has resulted in the discovery of three monuments of importance: a brick-built wharf, a water reservoir and a Buddhist monastery.

The wharf at Killiyur is built of large-sized brick, 60 × 40 cm, and lined with sturdy wooden poles for anchoring boats. (The *Paṭṭinappalai* describes such wharfs where the boats were moored to wooden poles for loading and unloading, like a row of horses kept in a stable. Small boats used to ply in the backwaters carrying salt to the interior places in exchange of paddy). ¹⁴C determination of the wood has given its date as the 3rd century B.C.

Another important and elegant excavated structure is a water reservoir at Vanagiri. Situated about 1600 m away from the sea, it is made on an earthen bund with a brick facade. It is designed with two graceful curves to receive the water and let it into a pond. Probably a small channel from the river or one of its numerous offshoots served as the feeding channel.

A significant discovery is that of an entire wing of seven rooms, each about 2.4 m square, of a Buddhist monastery in the Melaiyur portion of Kāveripūmpattinam. Adjacent to this is an ornamental structure, perhaps part of a *maṇḍapa*. The walls were decorated with stucco figures and paintings, one of the former having been found in the excavation. A fine copper image of Buddha in *dhyāna* pose has been recovered from one of the rooms. A large limestone slab, bearing sacred symbols like the *pūrṇa-ghaṭa*, *svastika*, etc., is reminiscent of similar ones from AMARAVATI and NAGARJUNAKONDA, indicating a live contact of Kāveripūmpattinam with the contemporary Buddhist sites further n.

Raman, K.V., 1968, *Excavations at Pūmpuhār*, handbook published by 2nd World Tamil Conference, Madras, pp. 238-40.

Sastri, K.A.N., 1955, *Coḷas*.—K.V. RAMAN

Kaveripuram, Dt Mysore. Extensive habitation site with black ware, red ware and Black-and-red ware [11.15].

IAR 1958-9.

Kavidimathi, Dt Bijapur. Microliths (of unspecified nature) and early historical [4.18.11] remains.

IAR 1961-2.

Kavitha. See PURNA VALLEY.

Kavtha, Dt Dhule. Site yielding late Harappa [4.10] red and buffish ware comparable with that of RANGPUR II B and LOTHAL B.

IAR 1968-9.

Kavumgumprayar, Dt Alleppey. Megalithic [4.17.10] site having a cist chamber with rusted and broken iron implements and a polished stone axe.

IAR 1969-70.

Kawdi, Dt Chanda. Microlithic (of unspecified nature) site.

IAR 1959-60.

Kawtal, Dt Raichur. Ash-mound [14.3].

AR Hyderabad Arch. Dept, 1935-6, Appendix A. Allchin, F.R., 1963, *Neolithic Cattle-Keepers of India*, Cambridge, p. 67.

Kayalpattanam, Dt Tirunelveli. Megalithic [4.17.9] site. ASI—AR, 1902-3.

Kayamoli, Dt Tirunelveli. Site on the e. fringe of the Kudiraimoli *teri* [9.5] but no collection from it is available for study. See SAWYERPURAM.

AI, 12, 1956, p. 14.

Kayatha (23°14'; 76°2'), Dt Ujjain, located on the right bank of the Chhoti Kali Sindh, a tributary of the Kali Sindh which in turn belongs to the Chambal system. The present village is about 25 km e. of Ujjain and is situated on ancient mounds. The place can be identified with ancient Kapitthaka, the birth-place of Varāhamihira, the celebrated astronomer of 5th-6th centuries. The site was discovered by V.S. Wakankar of the Vikram University, Ujjain, who carried out a small-scale excavation at the site in 1965-7. (IAR 1964-5, p. 18; 1967-8, p. 24). It was later on excavated by the Deccan College, Poona, in 1968 in collaboration with the Vikram University. The evidence from the excavation is divisible into five cultural Pds, of which the first three are Chalcolithic—all with skeletal remains of the horse [15.1].

Pd I, Kayatha culture (c. 2000-1800 B.C.). The culture of the earliest inhabitants of Kayatha has been named as the Kayatha culture, which is distinct from all other Chalcolithic cultures of the subcontinent. It does not, however, appear to have originated at the site but had already developed elsewhere. It is characterized by three distinct ceramic industries of which two have painted wares and one an incised ware. The tool outfit is Chalcolithic in character, it has copper tools, albeit on a restricted scale, and a specialized blade-flake industry of siliceous material like chalcedony. The people lived in small mud huts with thatched roofs and well-laid floors. Since the excavation was confined to a small area, no complete house plan was recovered.

Of the three ceramic industries the principal ware, labelled as the Kayatha Ware [11.7], is a fine, sturdy pottery having broad zones of thick dark-brown slip, usually from lip to shoulder and sometimes extending to the base. Over this ground are executed painted patterns in purple. The designs are all linear such as bold strokes, either vertical or oblique, loops and zigzags. The shapes include the jar with a globular profile and bowl with thickened incurved rim and carinated shoulder. Also present are huge storage jars with heavily beaded rims which show a significant likeness to the corresponding Harappa form [11.3]. Most of the vessels have a ring base.

The second industry—a red-painted buff ware—is of an extremely fine fabric and is thin-walled, also with designs. The commonest form is the typical *lotā*—a small

vessel with a flaring mouth, round bottom and carinated body. Besides there are the dish and high-necked globular jar. The third industry is an incised ware without slip or wash but bearing incised patterns such as multiple zigzags chevrons, etc., which were probably executed by a comb-like instrument. Only the bowl and dish are represented in this ware. Associated with all these wares is a coarse, handmade pottery, red grey in colour and sometimes decorated with incised designs. Besides there are also the coarse handmade storage jar, basin and dough plate.

The authors of the Kayatha culture had already mastered the technology of copper before their arrival at Kayatha. This is evidenced by the find of two fine copper axes and 28 bangles; the latter were found deposited in two red-painted buff-ware pots, 15 in one and 13 in another. Of the personal ornaments two exquisite necklaces made up respectively of 175 and 160 beads, mostly of carnelian and agate, were found in two red-painted buff-ware pots while one similar pot contained over 40000 microbeads of steatite.

Pd II, Banas culture (c. 1700-1500 B.C.). About a century or so after the disappearance of the Kayatha culture in c. 1800 B.C. the site was reoccupied by the people of the Banas (AHAR²) culture [4.14.1], characterized by the white-painted black-and-red ware [11.6.2], somewhat coarse in fabric. The commonest forms in this ware are a variety of the bowl and dish. Another important ceramic is a red-slipped ware, including such variants such as tan and brown-slipped pottery, all highly burnished. A noteworthy shape in this ware is the vase with a corrugated neck and shoulder, bulging body and pedestalled base. Associated with this is the coarse red/grey and the thick handmade pottery.

The Banas culture, as evidenced by the excavation at AHAR², has been found to be a purely copper-using culture, but at Kayatha a full-fledged stone blade industry characterizes it. An interesting feature of this culture as revealed at Kayatha is the terracotta [17.1] bull figurines of a singularly unique variety. Their representations are naturalistic as well as stylized. Of the naturalistic rendering there is nothing that is noteworthy; it is the stylized forms that deserve special attention. In most cases the head with the horns and hump are present, but the whole hind part is absent and in its place we see a stem with a rounded end. Sometimes the end is flat and thus serves as a pedestalled base, probably for keeping the figurine on a platform during ritual. The degree of stylization reaches a new mark in the form that depicts a pair of horns on a stem or pedestal. These stylized bulls, perhaps used as votive offerings, have no parallel elsewhere.

Pd III, Malwa culture (c. 1500-1200 B.C.). There is an appreciable overlap between the Banas culture and the

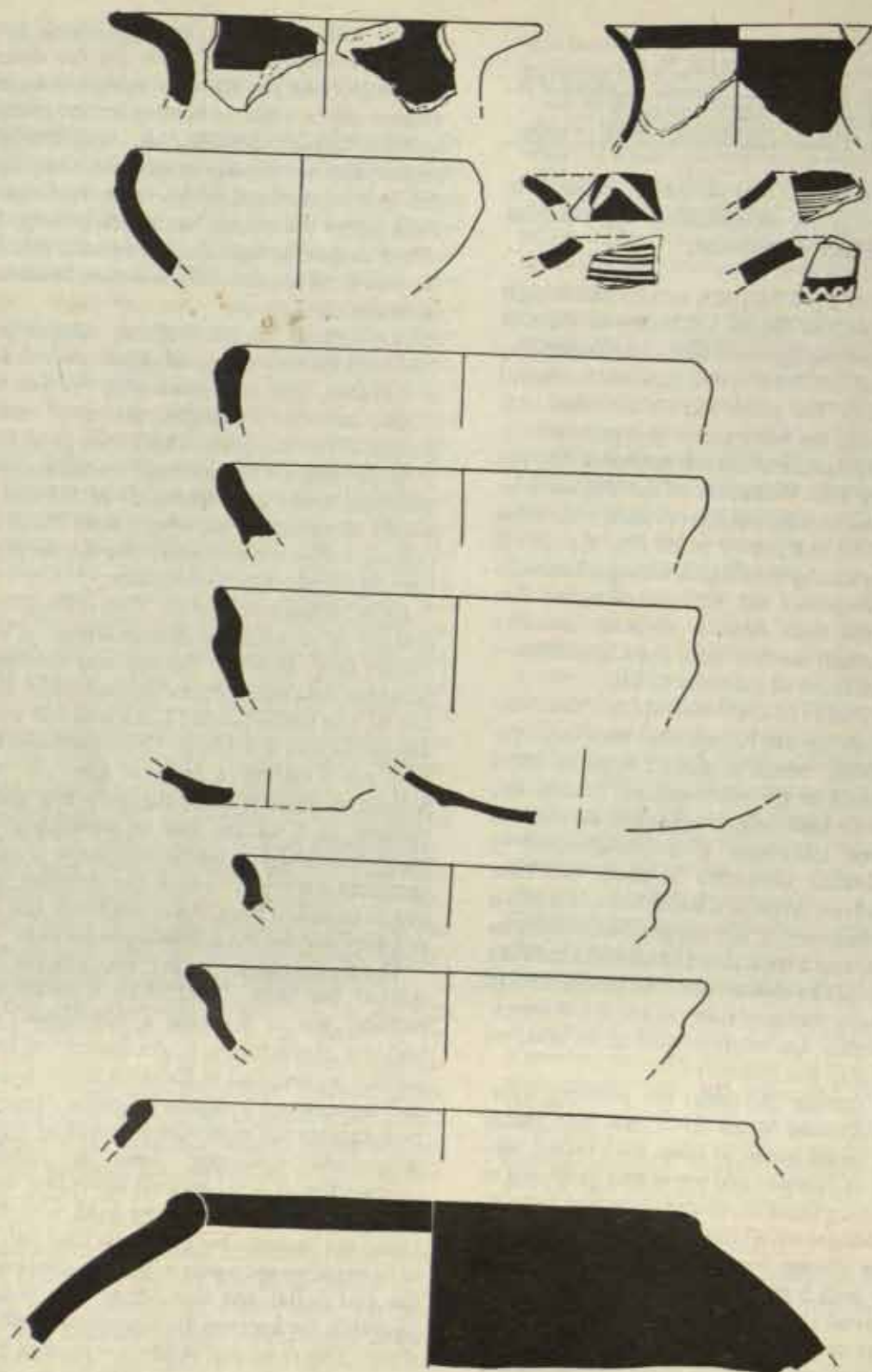


Fig 9. Kayatha ware, Period I.

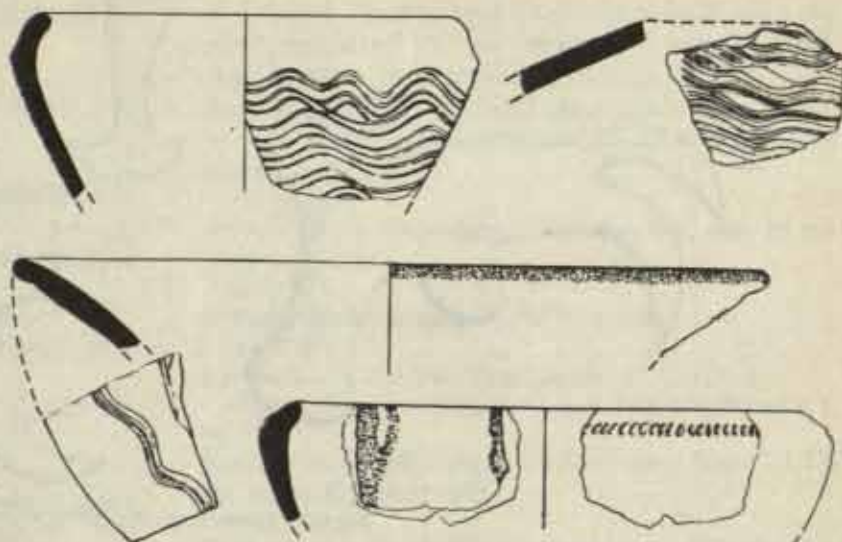


Fig 10. Kayatha incised pottery, Period I.

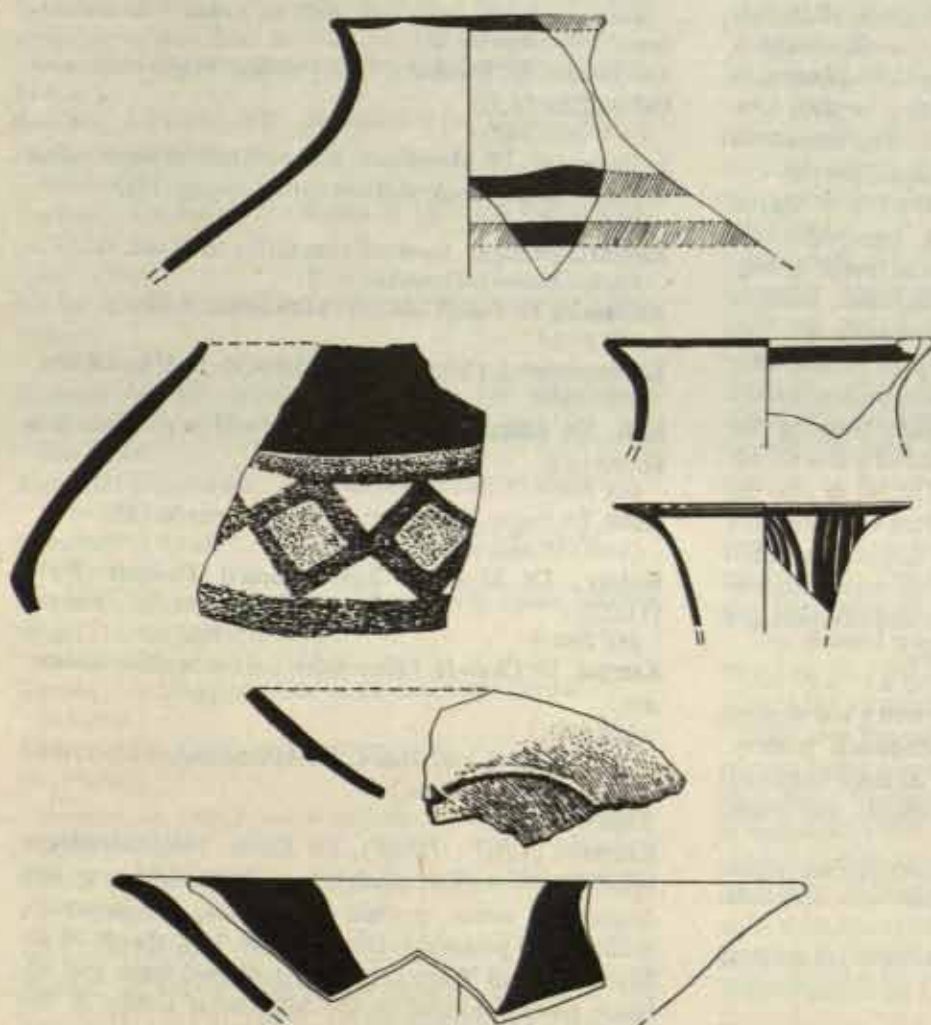


Fig 11. Kayatha red-on-buff painted ware.

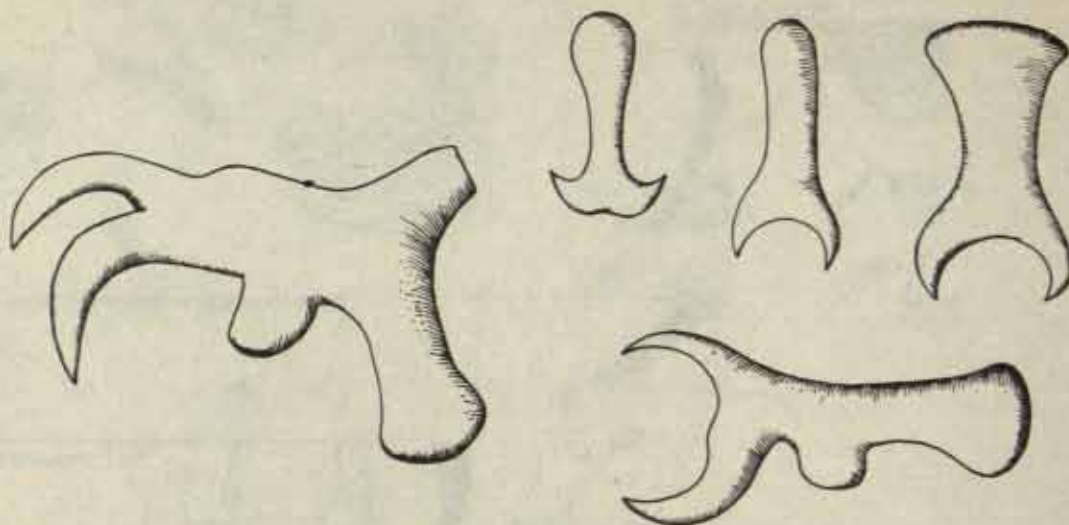


Fig 12. Kayatha terracotta bull figurines.

succeeding Malwa culture [4.14.5] which is characterized by the well-defined Malwa Ware [11.10] with all its rich variety of forms and painted designs. Associated with it is the white-painted black-and-red ware [11.6.2] which is undoubtedly a survival of the preceding period. The coarse handmade wares also continue. The terracotta bull figurines, both naturalistic and stylized, persist.

Pd IV, (early historical, c. 600-200 B.C.). A sterile layer of black soil, about 30 cm thick, intervenes between the Malwa and the early historical levels. It suggests that the site was deserted for a long time, possibly for seven centuries, only to be occupied again in c. 6th century B.C., this time by a new group of people who had mastered the technology of iron as is evident from a number of iron tools and implements. Among the ceramic wares mention should be made of a few sherds of the NBPW [11.16] and the PGW [11.14] as also the plain grey ware associated with the black-and-red ware which however is coarse in fabric and devoid of painted ornamentation. Besides there are a few terracotta objects such as ear studs, bangles, spools and stoppers and beads of glass and semiprecious stones.

Pd V, Suṅga, Kushan, Gupta (c. 200 B.C.-A.D. 600). The Pd is characterized by a red ware and a red-slipped ware associated with which is a handmade pottery. Typical cups of plain red ware occur in large numbers. The minor finds include terracotta spools, ear studs, toy-cart wheels, shell bangles, etc.

Wakankar, V.S., 1967, in *Vikram* (Univ. Jour.), Spl. No., Ujjain. Ansari, Z.D., & Dhavalikar, M.K., 1975, *Excavation at Kayatha*, Poona.—M.K. DHAVALIKAR

Kayera, Dt Birbhum. Black-and-red Ware (of unspecified nature).

IAR 1967-8.

Kazimpur, Dt Meerut. OCW [11.5] site.

IAR 1966-7.

Kazipalli, Dt Hyderabad. Megalithic [4.17.7] site.

Sreenivasachar, P., 1963, *Arch. Bull.* 11, Andhra Pradesh Arch. Series, 5 Hyderabad, p. 2.

Kechanda, Dt Bankura. Site yielding blade industries (Mesolithic [4.5]).

IAR 1964-5; 1965-6.

Kedareswar, Dt Mandsaur. Palaeolithic (of unspecified nature) site and rock-shelters with paintings [13].

IAR 1958-9.

Kedlari, Dt Sagar. Lower Palaeolithic [4.2] site.

Madhya Pradesh ki Ruparekha, p. 37.

Kelamula, Dt Panch Mahals. Mesolithic [4.5] site.

IAR 1972-3.

Kelasanagar, Dt Mysore. Megalithic [4.17.8] burial site.

IAR 1968-9.

Keli, Dt Chittaurgarh. Black-and-red ware site. See DARAULI.

IAR 1956-7.

Kelsi, Dt Sagar. Three flat celts of copper [4.116].

Central Museum collection, Nagpur.

Kelsur, Dt Mysore. Russet-coated Painted Ware [11.22].

IAR 1962-3.

Kemjai, Dt Chanda. Palaeolithic (of unspecified nature) site.

IAR 1960-1.

Kendal Budruk and Khurd, Dt Ahmadnagar. Microliths (of unspecified nature).

IAR 1958-9.

Kendatti (13°07'; 78°02'), Dt Kolar. Neolithic-Megalithic [4.6.9, 4.17.8] site yielding burnished grey and coarse red wares, ground stone axes, axe-hammers, mullers and pounders. Iron slag [16.9.4], sherds of the Black-and-red Ware [11.15] red-slipped ware and all-black ware belonged to the Megalithic levels. A few cairn circles were also found.

IAR 1967-8.

Kendlo, Dt Birbhum. Late Stone Age (Mesolithic [4.5]) and Chalcolithic [4.14.4] site.

IAR 1965-6.

Kendposi, Dt Singhbhum. Dolmenoid structures and menhirs [4.17.4].

IAR 1961-2.

Kendua, Dt Bankura. Historical remains in the form of plinth of temples, habitational structures and pottery. The temples are datable to c. 12th-13th centuries and are Jaina in affiliation.

IAR 1959-60.

Kendudiha (22°5'; 86°39'), Dt Mayurbhanj. See KULIANA.

Kenduki, Dt Saharanpur. Grey ware, Śunga-Kushan red ware and medieval glazed ware.

IAR 1963-4.

Kenginal, Dt Bijapur. Neoliths [4.6.9] and painted black-on-red Chalcolithic [4.17.8] pottery. See DULAKHEDA.

IAR 1957-8.

Kenteri, Dt Nilgiri. Megalithic [4.17.9] site with cairns yielding pottery, iron implements and bronze vessels.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Keolari¹, Dt Datia. Site inhabited in the early centuries of the Christian era.

IAR 1971-2.

Keolari², Dt Jabalpur. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1959-60.

Keora, Dt Birbhum. Black-and-red ware (of unspecified nature).

IAR 1967-8.

Keoreswar, Dt Indore. Microliths (of unspecified nature).

IAR 1958-9.

Kera, Dt Singhbhum. A shouldered copper celt [4.11].

Patna Museum collection.

Kerabele, Dt Kolar. Megalithic [11.17.8] burial site.

IAR 1969-70.

Kerakat, Dt Jaunpur. Site with sherds of Black-slipped Ware [11.13] and red ware.

IAR 1966-7.

Kerala, Dt Junagadh. Site of the Ksatrapa period.

IAR 1963-4.

Keralakatte, Dt Tumkur. Megalithic [4.17.8] site with cist burials.

Seshadri, M., 1961, *Report on the Jadigenahalli Megalithic Excavations*, Mysore, p. 2.

Kerali (21°00'; 70°20'), Dt Rajkot. Post-Harappa site corresponding to RANGPUR II C.

AI, 18 & 19, 1962 & 1963, p. 206. IAR 1958-9.

Kerasi, (23°40'; 70°44'), Dt Kutch. Extensive low mound yielding Harappa [11.3] red ware, black-and-red ware of crude variety and a greenish-buff ware. Some bowls comparable with those from RANGPUR II were

also found. The Harappa types represented in the red ware comprised the jar, bowl, dish and jar-stand. Among other finds was a fragmentary wheel of a terracotta toy-cart [16.19] and chert blades. Coarse red ware comparable with the RANG MAHAL Ware [11.24] was also noticed.

IAR 1965-6.

Keravalo, Dt Bhavnagar. Harappa [4.9] site in the Kalubhar valley.

IAR 1960-1.

Kerawa, Dt Bharatpur. PGW [11.14] site.

IAR 1970-1.

Kerehala, Dt Raichur. Chalcolithic [14.17.8] site.

AR Hyderabad Arch. Dept, 1935-6, p. 2. *Karnataka Bharati*, 6, 1, pp. 64-75.

Keriya old, Dt Bhavnagar. Red Polished Ware [11.23] site in the Kalubhar valley.

IAR 1960-1.

Kerlavlo (21°52'; 71°38'), Dt Bhavnagar. Post-Harappa site assignable to RANGPUR II C.

AI, 18 & 19, 1962 & 1963, p. 206.

Kerwadi, Dt Dharwar. Megalithic [4.17.8] stone circles.

IAR 1960-1.

Kesalpura, Dt Sehore. Painted rock-shelters [13].

IAR 1960-1.

Kesanapalli, Dt Guntur. Excavation revealed a Buddhist *stupa* with two structural phases, the earlier of them assignable to c. 2nd or 1st century B.C.

IAR 1965-6.

Kesarapalle (16°35'; 81°50'), Dt Krishna, near Ganavaram, the mound covering an area of about 1520 × 1200 m, with successive occupations from the Chalcolithic [4.14.7] to the early historical [4.18.9] times. A nullah, which had anciently a perpetual stream of water, runs from s.-e. to n.-e. through the area of the mound. It used to empty itself into a lake-like formation—a feature quite common in this fertile plain. This favourable ecological factor must have helped to sustain a continuous occupation of the site for over a millennium. Traces of a late medieval occupation have also been noticed.

The mound was excavated by the writer on behalf of the ASI, in 1962. Though the high water-table did not permit the excavation to reach the natural soil, it is fairly certain that the earliest settlers here were a Chalcolithic people using a burnished grey ware and black, grey and red wares, besides the black-and-red ware. The pottery is unpainted but for two small sherds—one of them depicting a design in black on grey and the other white on black. Admittedly the black-and-red ware together with a feeble trend of paintings thereon represents an intrusive Chalcolithic element, perhaps from Rajasthan [4.14.1] or c. India [4.14.5], grafted on a late Neolithic tradition [4.6.8]. A few pottery discs, two bone points and a conical terracotta object, perhaps of ritualistic import, have also been found. The animal

bones, sometimes charred, include those of the bull or cow, buffalo, goat, sheep, pig and spotted deer. Bones of birds and fish, apart from heaps of mollusc shells, indicate the people's food-habit. Another noteworthy feature is the occurrence of pits, sometimes edged by post-holes. Two Neolithic celts have been discovered from the surface.

The Chalcolithic period, Pd I datable from the middle of the 8th century to the middle of the 5th century B.C., shows in its last phase an overlap with the Megalithic culture, Pd II [4.17.8]. Iron makes its appearance in this Pd, which is characterized by the Black-and-red Ware [11.15] and cist burials [12.4], the latter located close to the habitation site. The people lived in some sort of shelter, for post-holes are quite common; there are hearths filled in with chunks of burnt earth and ash. Animal bones and mollusc shells have also been recovered. The occurrence of a sherd of the NBPW [11.16], besides its associated types, in the upper levels indicates the commingling of the s. and n. traditions some time in the 2nd century B.C. The Megalithic occupation as well as the rectangular cists [4.17] laid n. to s. may be dated from the middle of the 5th century B.C. to the 1st century A.D. No post-hole cist [4.17] has been noticed; stone circles and capstones [4.17] being the surface indication that these megaliths occupied an uncultivable red-soil area.

In its last phase, the Megalithic culture reveals an overlap with the early historical phase [4.18.9] coeval with the period of use of the Rouletted Ware [11.21]. This has been designated as Sub-pd III A, covering a time span from the middle of the 1st century to the first quarter of the 3rd century A.D., and followed by Sub-pd III B (3rd and 4th centuries A.D.), contemporaneous with the period of the Ikshvāku ascendancy in the lower Krishna basin.

Sarkar, H., 1966, in *AI*, 22.—H. SARKAR

Kesapur, Dt Ahmadnagar. Series II (Middle Palaeolithic [4.3]) tools and early historical [4.18.9] site.

IAI 1959-60.

Kesaratti, Dt Raichur. Chalcolithic [4.17.8] site.

Karnataka Bharati, 6, 1, pp. 64-75.

Kesarava, Dt Bharuch. Middle Palaeolithic [4.3] and Mesolithic [4.5] site.

IAI 1968-9.

Kesargarh, Dt Purulia. Blades, flakes and cores (of unspecified nature) were found.

IAI 1971-2.

Kesariya, Dt Motihari. Excavated Buddhist stūpa.

ASI—AR, 1, pp. 64-7, 16, pp. 16-19. ASI—AR, *Bengal Circle*, 1902, p. 6. Mitra, D., 1971, *Buddhist Monuments*, Calcutta, p. 75.

Kesarpada, Dt Dhule. Palaeolithic (of unspecified nature) site.

IAI 1959-9.

Keshav, Dt Junagadh. Microlith (of unspecified

nature) site.

IAI 1954-5.

Kesopura (29°27'; 74°52'), Dt Hissar. Rang Mahal [11.24] site.

IAI 1967-8.

Kesot, Dt Bharatpur. PGW [11.14] site.

IAI 1970-1.

Kesranti, Dt Rohtak. Late Harappa [4.10] and early historical [4.18.1] site.

Jour. Haryana Studies, p. 5.

Kesur, Dt Dhar. Microliths (Chalcolithic ? [4.17.6]) and sherds of the black-and-red ware and black-and-grey ware, sometimes painted, as at PRAKASH.

IAI 1965-6.

Kethuri, Dt Vidisha (?). Lower Palaeolithic [4.2] site on the Betwa.

IAI 1958-9.

Kettampatti, Dt Tiruchchirappalli. Megalithic [4.17.10] site with urn burials.

Gururaja Rao, B.K., 1971, ed., *Prof. Nilakanta Sastri Felicitation Vol.*, Madras.

Kevadia, Dt Kaira. Late Stone Age (Mesolithic [2.5]) site on the bank of the Jethuli Dam yielding fluted cores, blades, scrapers, lunates and flakes.

IAI 1967-8.

Kevdi, Dt Surat. Early, Middle (Lower, Middle Palaeolithic [4.2.3]) and Late Stone Age (Mesolithic [4.5]) sites.

IAI 1967-8.

Kevid-pada, Dt Dhule. Microliths (of unspecified nature).

IAI 1959-60.

Khabba, Dt Amritsar. Black-slipped Ware [11.13] and black-and-red and grey wares.

IAI 1963-4.

Khachraud, Dt Ujjain. Chalcolithic [4.14.5] site yielding Kayatha Ware [11.7]. (Same as following?).

Wakankar, V.S., 1976, in *Arch. Congress and Seminar Papers*, 1972, Kurukshetra, p. 56.

Khachrod, Dt Ujjain. Chalcolithic [4.14.5] site. (Same as preceding?).

IAI 1970-1.

Khachroda, Dt Ujjain. Site with Kayatha Ware [11.7]. (Same as preceding?).

IAI 1966-7; 1968-9.

Khadamba Budruk and Khurd, Dt Ahmadnagar. Microliths (of unspecified nature).

IAI 1958-9.

Khadeupur. See BOGGERU VALLEY.

Khadighat, Dt Dhule. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAI 1969-70.

Khaga, Dt Fatehpur. Site with PGW [11.14] and NBPW [11.16].

IAI 1960-1.

Khagaria, Dt Indore. Microliths [4.14.6] in association with black-and-red, black-and-cream and grey ware.

IAR 1958-9.

Khaghalala. See NIDANA².

Khai-khera¹, Dt Meerut. Red ware of Śunga-Kushan assemblage and medieval ware.

IAR 1962-3.

Kai-khera², Dt Muzaffarnagar. Grey ware associated with NBPW [11.16], red ware of Śunga-Kushan assemblage and medieval ware.

IAR 1962-3.

Khainpur, Dt Bijapur. Chalcolithic [4.17.8] site. See ALMEL.

IAR 1959-60.

Khaira¹, Dt Nagpur. 35 artefacts of a scraper-flake-blade assemblage were found.

IAR 1959-60.

Khaira², Dt Sidhi. Tools of Early and Middle Stone (Lower [4.2] and Middle Palaeolithic [4.3]) Ages.

IAR 1962-3.

Khairabad, Dt Bijnor. PGW [11.14] site.

IAR 1959-60.

Khairawa, Dt Dhule. Chalcolithic [4.14.6] remains.

IAR 1958-9.

Khairawada, Dt Dhule. Microliths (of unspecified nature).

IAR 1958-9.

Khairala, Dt Dhule. Microliths (of unspecified nature).

IAR 1960-1.

Khairi, Dt Kurukshetra. PGW [11.14] site.

IAR 1960-1. Suraj Bhan, 1975, *Excavation at Minthal & other Exploration in the Sutlej-Yamuna Divide*, Kurukshetra, p. 124.

Khairpur, Dt Sidhi. Tools of Early and Middle Stone (Lower and Middle Palaeolithic [4.2, 3]) Ages.

IAR 1962-3.

Khairwa, Dt Wardha. Megalithic site. See 4.17.6.

Khajaraya, Dt Indore. Clactonian [16.15] flakes were collected.

IAR 1970-1.

Khajarwara, Dt Jabalpur. Site with Series II (Middle Palaeolithic [4.3]) tools.

IAR 1959-60.

Khajjidoni (16°10'; 75°25'). See GHATAPRABHA VALLEY.

Khajnavar, Dt Saharanpur. Śunga-Kushan and medieval wares.

IAR 1964-5.

Khajuraho (24°51'; 80°0'), Dt Chhatarpur, renowned for its temples. Within a radius of 4 km. 10 Stone Age sites on the banks of the Khudar and its affluents have been located. The Middle Palaeolithic [4.3] is essentially a flake-blade-scraper industry, none of the tools having been recovered *in situ* and some of them being rolled. Most of the flakes and tools have obtuse-angled striking platform and unworked undersurface and betray the Levallois technique [16.17.1]. The assemblage includes an unfinished and doubtful specimen of a large pebble chopper and a small handaxe. The Microlithic industry is

represented by non-geometric and geometric microliths of Mesolithic tradition [4.5], together with an overall majority of short parallel-sided blades made on cryptocrystalline colloidal silica and rarely on quartz and trap of the Neolithic-Chalcolithic tradition [4.14.5]. Finally Neolithic axes, adzes, hoes, mace-heads, sling-balls and a stone vase complete the Stone Age equipment of the region.

K. Kumar, 1969-70, in *Purātattva*, 2, pp. 89-104.—A. GHOSH
Khajurgaon-ka-Kot, Dt Ghazipur. Black-and-red ware (of unspecified nature).

IAR 1963-4.

Khajuri¹, Dt Bijnor. PGW [11.14] site.

IAR 1959-60.

Khajuri², Dt Mirzapur. Microliths (of unspecified nature). Also a Megalithic [4.17.3] site.

IAR 1961-2; 1962-3.

Khajuri³, Dt Vidisha. Lower Palaeolithic [4.2] tools from compact gravels.

IAR 1958-9. Sankalia, H.D., 1974, *Prehistory & Protohistory of India & Pakistan*, Poona.

Khajuri valley, Dt Varanasi. Microliths (of unspecified nature).

IAR 1961-2.

Khajurka, Dt Gurgaon. PGW [11.14] site.

Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.

Khakhara Bela-I, -II and -III, Dt Rajkot. Sites in the Aji valley with Harappa Ware [11.3], coarse corrugated ware and Red Polished Ware [11.23].

IAR 1960-1.

Khakhra Dera, Dt Kutch. Harappa Ware [11.3] and ware of the early historical period [4.18.2].

IAR 1960-1.

Khakharadih, Dt Monghyr. Sherds of the NBPW [11.16] and red ware were found besides a core, a scraper and terracotta beads and human figures.

IAR 1961-2.

Khaksar, Dt Kheda. Mesolithic [4.5] and Chalcolithic [4.14.6] site.

IAR 1971-2.

Khalaua (27°05'; 77°50'), Dt Agra, about 16 km s.-w. of Agra, a little away from the Agra-Jagner road. The mound, known as Gwal-Khera and lying s.-w. of the village, in 242 m s.-w., 148 m n.-s. and 5 m high and lies on the bank of the extinct Son-kheri rivulet, which was possibly an affluent of the Khari Nadi. The latter joins the Utangan, which in its own turn discharges itself into the Yamuna. J.P. Gupta of the ASI reported the presence on the mound of both the PGW [11.14] and black-and-red ware [11.6.3] in 1965-6. In order to ascertain the relationship between these two wares, the writer with the assistance of T.S. Iyengar laid three exploratory trenches here in the same year, one in the centre of the mound and two at the slopes (IAR 1965-6, p. 41).

Proper virgin soil was seen to lie 6 m below the surface

at the centre of the mound. Above it a thickness of 1 m has also no sign of human interference. But over this a sandy fluviatile deposit yielded a few fragments of red ware, Black-slipped Ware [11.13] and black-and-red ware, although they were redeposited here by flood activity. The habitation proper at the site of the mound began only over this sandy deposit, after a thin clayey layer had consolidated the surface. From this level the top of the mound measured about 4 m.

The entire accumulation reveals a single culture from the lowest to the topmost and is characterized by the overlapping occurrence throughout of the PGW and black-and-red ware. The other wares associated with these two are the plain grey, coarse black-and-red and red wares and Black-slipped Ware. The total deposit may however be divided into two phases A and B, the lowest habitation layer being numbered 11. In the lowest levels of Phase A the six wares mentioned above share an approximate percentage of 4, 13, 5, 20, 50 and 8 respectively. The percentages differ from layer to layer, but the PGW drops down to 2% in Phase B. So do the black-and-red ware and Black-slipped Ware, although their numerical decline sets in abruptly a little earlier towards the top of Phase A. The plain grey ware has a low strength at either end but enjoys an increased frequency of as much as 24% in the middle levels. The coarse black-and-red ware is steady throughout while the red ware shows a gradual upward trend, till in the uppermost layer it assumes a percentage of 90 of the total. A single NBPW [11.16] sherd has been obtained from the lower Phase B level.

The range of paintings in the PGW is very limited, but a criss-cross design and a leaf filled with parallel hatchings are perhaps motifs not yet recorded on the PGW elsewhere. A small fragment of the base of dish painted on both sides shows a large rosette on the underside.

Dishes and straight-sided bowls are the only shapes in the PGW and Black-slipped Ware and black-and-red and plain grey wares. Pitchers, cooking vessels and storage jars are all in dull-red wares. Some of the PGW sherds have burnt to a reddish colour on one side.

A single-course flooring of mud brick of different sizes in the lower levels of Phase B represents the only evidence of structural activity. The yield of minor antiquities is equally poor and includes a bone arrowhead, a copper bangle piece, beads of terracotta and carnelian, a terracotta human head and a small ivory disc. All this shows that the site was only a small village.

Three ^{14}C dates have been given by charcoal samples from layers 9, 8, and 7. These dates are 535 ± 95 , 485 ± 170 and 570 ± 160 B.C. respectively. Perhaps the third sample was carbonized earlier but got redeposited in the later layer. If we accept these dates, the beginnings of the site may be a century earlier than 535 B.C. and the

end about two centuries later than 485 B.C. These dates are in general conformity with other ^{14}C dates for the PGW in the upper Ganga valley.

Khalava could not claim an independent horizon for the black-and-red ware and is thus different from ATRANJIKHERA and NOH; nevertheless it is in its lower levels that this ware occurs in substantial numbers.

—Y.D. SHARMA

Khalavad, Dt Bhavnagar. Red Polished Ware [11.23] site in the Shetrunji valley.

IAR 1960-1.

Khalej, Dt Junagadh. Site with Red Polished Ware [11.23].

IAR 1955-6.

Khalshinde, Dt Ahmadnagar. Chalcolithic [4.14.6] site.

IAR 1959-60.

Khamaria, Dt Ujjain. Chalcolithic [4.14.5] site.

IAR 1971-2.

Khambatti, Dt Nilgiri. Megalithic [4.17.9] site.

Brown, C.J., 1917, *Catalogue of Prehistoric Antiquities in the Indian Museum at Calcutta*, Simla.

Khambhodhar, ($21^{\circ}45'$; $69^{\circ}35'$), Dt Junagadh. Late Harappa [4.10] site assignable to RANGPUR II B and II C. Also with Prabhas [11.8] and Red Polished [11.23] Wares.

AI, 18 & 19, 1962 & 1963, p. 206. IAR 1972-3.

Khambha, Dt Surat. Microliths (of unspecified nature) were collected from the river Purna.

IAR 1971-2.

Khamgaon, Dt Dhule. Microliths (of unspecified nature).

IAR 1959-60.

Khamri, Dt Bhandara. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1959-60.

Khandadhar, Dt Rajkot. Site with Harappa Ware [11.3].

IAR 1957-8.

Khandagiri, Dt Puri. Early Stone Age (Lower Palaeolithic [4.2]) tools. See UDAYAGIRI-KHANDAGIRI.

IAR 1961-2.

Khandala, Dt Chanda. Microliths (of unspecified nature).

IAR 1960-1.

Khandbara, Dt Dhule. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1961-2.

Khandek, Dt Kutch. Historical site. See AJMEL.

IAR 1965-6.

Khandera, Dt Raisen. See BHIMBETKA.

Khanderio, Dt Bhavnagar. Site in the Ghelo valley with Harappa Ware [11.3] and coarse corrugated ware.

IAR 1960-1.

Khandiala Khad, Dt Ambala. Early Stone Age (Lower Palaeolithic [4.2]) tools including handaxes and cleavers from Terrace 3 of the SIRSIA.

IAR 1971-2.

Khandivli. See KANDIVLI.

Khandoda, Dt Ujjain. Historical site (of unspecified nature).

IAR 1971-2.

Khangkhui, Dt E. Dt (?). Rock-shelter with a Stone Age (Lower Palaeolithic [4.2]) handaxes and cleaver from the lower deposit and points, borers, scrapers, blades, burins, cores and a few bone points from the upper.

IAR 1968-9.

Khanpur¹, Dt Kaira. Chalcolithic [4.14] site.

IAR 1972-3.

Khanpur², Dt Rohtak. PGW [11.14] site.

Jour. of Haryana Studies, 3, 1, p. 3.

Khanpur³, Dt Rupnagar. PGW [11.14] site.

IAR 1964-5. Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 123.

Khanpur⁴, Dt Surendranagar. Harappa [4.9] site.

IAR 1962-3.

Khanpur⁵. See GUNADA.

Khanuhakhan, Dt Allahabad. Early Stone Age (Lower Palaeolithic [4.2]) and Megalithic [4.17.3] site.

IAR 1969-70.

Khanuwal, Dt Gurdaspur. Black-slipped Ware [11.13] and black-and-red and grey wares.

IAR 1961-2.

Khapa. See TAKALGHAT and KHAPA

Khaparia, Dt Valsad. Middle (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) site.

IAR 1969-70.

Khaparkheda, Dt Dhule. Site yielding late Harappa [4.10] red and buffish ware comparable with that of RANGPUR IIB and LOTHAL B.

IAR 1968-9.

Khaparla-Khurd, Dt Chanda. Palaeolithic (of unspecified nature) site.

IAR 1960-1.

Kapri, Dt Chanda. Palaeolithic (of unspecified nature) site.

IAR 1959-60; 1960-1.

Kharadipada, Dt Dhule. Late Stone Age (Mesolithic [4.5]) tools.

IAR 1960-1.

Kharagprasad, Dt Dhenkanal. Site on the Brahmani with Series I (Lower Palaeolithic [4.2]) tools.

IAR 1957-8.

Kharagpur Bazar, Dt Gonda. NBPW [11.16] site.

IAR 1962-3.

Kharahwan, Dt Lucknow. Early historical site yielding NBPW [11.16] and later wares.

IAR 1969-70.

Kharar, Dt Rupnagar. Site with SARANGPUR material.

Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 123.

Kharda-Kurd, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1961-2.

Khareda-no-Timbo, Dt Rajkot. Harappa [4.9] site.

IAR 1967-8.

Khareira, Dt Surat. Middle (Middle Palaeolithic [4.3]) and Late Stone (Mesolithic [4.5]) Age site.

IAR 1971-2.

Khareta, Dt Jabalpur. Middle Palaeolithic [4.3] site.

IAR 1968-9.

Khari-ka-Khanda (23°27'; 70°19'), Dt Kutch. Harappa red ware [11.3] represented mainly by the dish-on-stand, jar and beaker, shell bangle pieces and short parallel-sided blades.

IAR 1965-6.

Khari Pathari, Dt Mirzapur. Rock-shelter with paintings [13].

IAR 1962-3. Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad.

Kharkara, Dt Rohtak. Site with PGW [11.14], black-and-red ware, Black-slipped Ware [11.13], NBPW [11.16] and early historical wares.

Jour. Haryana Studies, 3, 1, p. 3.

Kharkhoda¹, Dt Meerut. OCW [11.5] site.

IAR 1966-7.

Kharkhoda², Dt Rohtak. Early historical [4.18.1] site.

Jour. Haryana Studies, 3, 1, p. 5.

Kharki-Mata. See SHIVNA VALLEY.

Kharligarh, Dt Bolangir. Early historical fortified site near the confluence of the Tel and the Rahul yielding sherds of coarse red ware of SISUPALGARH affinity and black-and-red ware. The find of microlithic flakes and cores may indicate an earlier background.

IAR 1968-9.

Kharoshi, Dt Pune. Microlithic (of unspecified nature) site.

IAR 1965-6.

Kharotia, Dt Ujjain. Early historical [4.18.7] site.

IAR 1971-2.

Kharsod Khurd, Dt Ujjain. Early historical [4.18.7] site.

IAR 1971-2.

Kharoti¹, Dt Midnapur. A large number of microliths (of unspecified nature) were found near the river Tarapheni.

IAR 1964-5. p. 46.

Kharoti², Dt Singhbhum. Lower Palaeolithic [4.2] site. See DHALBHUM.

Kharvai and Shahad Karad, Dt Bhopal. Excavation at a painted rock-shelter [13] produced microliths (Mesolithic ? [4.5]) in the bottom layers. The middle layer gave Chalcolithic [4.14.5] pottery and microliths and the top layer early historical pottery, iron and microliths. The results at Shahad Karad are very similar to those from Kharvai.

Wakankar, V.S., & Brooks, R.R.R., 1976, *Stone Age Paintings in India*, Bombay.

Kharwai, Dt Raisen. Sixty rock-shelters [13] near Kharwai, 10 km south of Raisen fort, with paintings in red and white and with Middle Stone (Middle Palaeolithic [4.3]) tools and fragmentary human bones below

- Malwa Ware [11.10]. One of the shelters contained an Aśokan Brāhmī inscription and another damaged paintings of c. 9th-10th centuries.
IAR 1960-1; 1966-7. K.D. Bajpai, 1976, in Arch. Congress & Seminar, 1972, Kurukshetra.
- Kharwan**, Dt Ambala. Late Harappa [4.10] and OCW [4.12] site.
 Suraj Bhan & Shaffer, J.G., 1978, in *Man & Environment*, 2, p. 62.
- Khatauli**, Dt Saharanpur. Harappa Ware [11.3] and OCW [11.5].
IAR 1964-5; 1966-7.
- Khatela Khera**, Dt Gurgaon. PGW [11.14] site.
 Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.
- Khatgarh**, Dt Bundi. Early and Middle Stone Age (Lower Palaeolithic [4.2] and Middle Palaeolithic [4.3]) tools were collected from the loose gravels on the river valley.
IAR 1970-1.
- Khatli**, Dt Rajkot. Site with Harappa Ware [11.3].
IAR 1957-8.
- Khatnal**, Dt Kheda. Early historical [4.18.2] site.
IAR 1971-2.
- Khatpukur**, Dt Midnapur. Sherds of black-and-red ware (of unspecified nature) and fragment of a slipped bowl of coarse grey fabric.
IAR 1955-6.
- Khayerbani**, Dt Purulia. Microliths (of unspecified nature).
IAR 1959-60.
- Khed¹**, Dt Pune. Tools of Series I and II (Early and Middle Palaeolithic [4.2, 3]) were found as also sherds of Red Polished Ware [11.23] on a mound near the place.
IAR 1956-7.
- Khed²**, Dt Sangli. Tools of the Middle and Late Stone (Middle Palaeolithic [4.3] and Mesolithic [4.5]) Ages.
IAR 1962-3.
- Khedki Majra**, Dt Gurgaon. PGW [11.14] site.
 Suraj Bhan, 1976, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, p. 126.
- Khedle-Parmanand**, Dt Ahmadnagar. Site with Chalcolithic [4.14.6] painted pottery, microliths and fluted cores.
IAR 1958-9.
- Khedoi**, Dt Kutch. Mesolithic [4.5] site.
IAR 1970-1.
- Khedwala**, Dt Jaipur. OCW [11.5] site.
IAR 1972-3.
- Khejuri**, Dt Dhule. Lower Palaeolithic [4.2] tools on the Betwa.
IAR 1958-9.
- Khekra**, Dt Meerut. PGW [11.14] and NBPW [11.16] on the right bank of the Hindon.
 Sharma, R.P., 1976, in *Arch. Congress & Seminar, 1972, Kurukshetra.*
- Kheli**, Dt Gurgaon. PGW [11.14] site.
 Punia, D.S., unpublished thesis, Kurukshetra Univ.
- Khemdhrol**, Dt Bhavnagar. Early historical [4.18.2] site.
IAR 1967-8.
- Khemjai**, Dt Chanda. Megalithic [4.17.6] stone circles.
IAR 1967-8.
- Khempur Kalera**. See THATAULA.
- Khera¹**, Dt Agra. Microlithic (of unspecified nature) site in the vicinity of Fatehpur Sikri with blades, points, etc., of carnelian, agate and other stones.
IAR 1958-9.
- Khera²**, Dt Aligarh. PGW [11.14] and NBPW [11.16] sites.
IAR 1962-3.
- Khera³**, Dt Ambala. PGW [11.14] site.
IAR 1964-5.
- Khera⁴**, Dt Chittaurgarh. Microlithic site about 3 km to the e. of Chittaur with fluted cores and blades with serrated edges and triangular or trapezoidal sections of chalcedony and agate. About 3 km w. of Chittaurgarh on the bank of the river Berach a few microlithic tools were also found.
IAR 1955-6.
- Khera Danta**, Dt Morena. Historical site in the Chambal valley. (Same as following?).
IAR 1972-3.
- Khera Danturda**, Dt Morena. Historical site in the Chambal valley. (Same as preceding?).
IAR 1972-3.
- Khera Kalan**, Delhi. PGW [11-14] site on the right bank of the Yamuna.
IAR 1968-9. Suraj Bhan, 1976, Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide, Kurukshetra, p. 126.
- Khera Kanker**, Dt Morena. Historical site in the Chambal valley.
IAR 1972-3.
- Khera Khas**, Dt Moradabad. Red ware of Śunga-Kushan assemblage and medieval ware.
IAR 1970-1.
- Khera Laduka**, Dt Morena. Historical site in the Chambal valley.
IAR 1972-3.
- Khera Nagali**, Dt Morena. Historical site in the Chambal valley.
IAR 1972-3.
- Khera Narayan**, Dt Ujjain. Chalcolithic [4.14.5] site.
IAR 1971-2.
- Kherani**, Dt Jabalpur. Microlithic [of unspecified nature] site.
IAR 1962-3.
- Khera Rameshwar**, Dt Morena. Historical site in the Chambal valley.
IAR 1972-3.
- Kherdi**, Dt Dadra and Nagar Haveli. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3]) and Neolithic [4.6] site on the Daman Ganga.
IAR 1965-6.
- Kheri¹**. See NEWEGAON.

Kheri², Dt Solan. Lower Palaeolithic [4.2] site in the Sirsa valley.

Verma, B.C., 1975, in *Jour. Geological Soc. Ind.*, 16, 4, pp. 518-21.

Kheri¹, Dt Udaipur. Series I (Lower Palaeolithic [4.2]) tools. (Same as following?).

IAR 1959-60.

Kheri², Dt Udaipur. Site in the Karan-ki-nadi valley with white-painted black-and-red ware [11.6.2] (Same as preceding?).

IAR 1962-3.

Kheri Gujar, Dt Rohtak. Pottery and sculptures of the early medieval period.

IAR 1968-9.

Kheri Mansingh. See YAMUNA RIVER.

Kheri-Nudh-Singh, Dt Ludhiana. Harappa [4.9] site.

Suraj Bhan, 1976, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 122.

Kheri-sarai, Dt Muzaffarnagar. Grey ware associated with NBPW [116], Black-slipped Ware [11.13], red ware of Sunga-Kushan assemblage and medieval ware.

IAR 1962-3.

Khetarvalo (21°58'; 71°37'), Dt Bhavnagar. Lustrous Red Ware [11.9] site assignable to RANGPUR II and III.

IAR 1960-1, AI, 18 & 19, 1962 & 1963, p. 206.

Kheuli, Dt Allahabad. Late Stone Age (Mesolithic [4.5]) site.

IAR 1969-70.

Khiching, Dt Mayurbhanj, ancient Khijjiṅga or Khijjiṅga-kotṭa, capital of the Bhanjas who ruled from the 9th century. An extensive mound known as Viratgarh is generally taken to be the site of the palace of the rulers. A small-scale digging at a spot of the site has brought to light the partial remains of a brick quadrangular structure with cells on four sides of a central courtyard. The structure appears to be a monastery, a presumption supported by the discovery in the area of six terracotta plaques with the relief of a *stūpa* and the Buddhist creed in characters of about the 10th century. Apart from a Neolithic celt [4.6.7] the mound has yielded several Kushan coins. The town had a number of religious centres, Brāhmanical, Buddhist and Jaina. The available structural remains and sculptures of Brāhmanical (Śaivite, and Vaisnavite) and Buddhist faiths bespeak a great development in architecture and art under the Bhanjas. Though no structures of Jaina affiliation have been located a few Jaina sculptures have been found.

The focus of the Brāhmanical centre was a Śiva *Pañcāyatana* group made of greenish stone, of which the one (Candraśekhara Mahādeva) temple in the s.-w. corner of the extinct main temple has survived to a considerable height. At the very spot of the central main temple dedicated to Hara has been reconstructed an imposing temple by assiduously and cleverly assembling fallen architectural members of the old temples and

using new stones wherever old pieces could not be found.

ASI—AR 1923-4.—D. MITRA

Khilarhatti, Dt Bijapur. Megalithic [4.17.8] stone circles.

IAR 1961-2.

Khilru-Haleranor, Dt Kangra. Lower Palaeolithic [4.2] site.

Mohapatra, G.C., in *Bull. Deccan College Res. Inst.*, 1966, pp. 221-37.

Khindwari, Dt Meerut. PGW [11.14] site.

IAR 1968-9.

Khinsvar, Dt Jodhpur. Fluted chert cores (of Chalcolithic affiliation?).

IAR 1956-7.

Khirasar, Dt Kutch. Historical site. See AJMEL.

IAR 1965-6.

Khirkha-Sunarkar, Dt Saharanpur. Sunga-Kushan and medieval wares.

IAR 1964-5.

Khirkha Zunnardar, Dt Saharanpur. PGW [11.14] site.

IAR 1968-9.

Khiri Khiri (Biloni), Dt Morena. A few microliths (of unspecified affiliation) were picked up from the banks of the Chambal.

IAR 1972-3.

Khirwa, Dt Jodhpur. Middle Palaeolithic [4.3] site 10 km n. of Phalodi.

Agrawal, D.P., 1978, in *Man & Environment*, 2, p. 75.

Khodasgaon, Dt Dhule. Microliths associated with ochre-coloured pottery. See DHAMDAL.

IAR 1957-8.

Khodi. See 4.6.3.

Khodiyar (21°24'; 71°09'), Dt Bhavnagar. Late Harappa [4.10] site assignable to RANGPUR II B and II C. Also Red Polished Ware [11.23].

IAR 1960-1, AI, 18 & 19, 1962 & 1963, p. 206.

Khoh, Dt Banda. A large number of polished stone celts with pointed butt, splayed edge, convex sides and lenticular cross-section [4.6.3] were picked up.

IAR 1955-6.

Khojakhedi, Dt Damoh. Lower and Middle Palaeolithic [4.2, 3] tools from cemented conglomerate.

IAR 1957-8, AI, 17, 961, pp. 5-36.

Khojalwasa, Dt Bharuch. Middle (Middle Palaeolithic [4.3]) and Late Stone (Mesolithic [4.5]) Age site.

IAR 1969-70.

Khokhar¹, Dt Gurdaspur. Early historical remains. See ACHAL-SAHEB.

IAR 1961-2.

Khokhar², Dt Hissar. Early historical site [4.18.1].

Silak Ram, 1972, unpublished thesis, Kurukshetra Univ.

Khokhari, Dt Kurukshetra. Late Harappa [4.10] and grey ware site.

IAR 1966-7.

Khokra-ka-Choa, Dt Solan. Lower Palaeolithic [4.2] site in the SIRSA VALLEY.

Mohapatra, G.C., 1966, in *Bull. Deccan Coll. Res. Inst.*, p. 224.

Khokra-kot [28°53'; 76°34'], Dt Rohtak. NBPW [11.16] and other early historical material were found. [See 3.1. for coin moulds].

AI, 10 & 11, 1954 & 1955, p. 144. IAR 1962-3.

Khokrala, Dt Dhule. Microliths (of unspecified nature). IAR 1961-2.

Khola-More, Dt Mandasaur. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAR 1965-6.

Khondamali, Dt Dhule. Mesolithic [4.5] site.

IAR 1960-1.

Khootali, Dt Sidhi. Tools of the Early and Middle Stone (Lower and Middle Palaeolithic [4.2, 3] Ages).

IAR 1962-3.

Khor¹, Dt Chittaurgarh. Microliths (of unspecified nature), black-and-red ware (of Banas [11.6.2] affiliation) and other associated pottery. (Same as following?).

IAR 1956-7.

Khor², Dt Chittaurgarh. Palaeolithic site. See NAGARI. (Same as preceding?).

IAR 1956-7.

Khorana¹, Dt Rajkot. Historical site (of unspecified nature).

IAR 1972-3.

Khorana², Dt Surendranagar. Early historical site [4.18.2].

IAR 1962-3.

Khori, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1964-5.

Khrupir-Jangal, Dt Burdwan. Microliths (of unspecified nature).

IAR 1960-1.

Khudan, Dt Rohtak. Early historical [4.18.1] site.

Jour. Haryana Studies, 3, 1, p. 7.

Khudana, Dt Dhule. Artefacts ascribable to the post-Middle Stone (Middle Palaeolithic [4.3]) Age and pre-Late Stone (Mesolithic [4.5]) Age.

IAR 1964-5.

Khujadiya. See GHUGHARALU.

Khundhan, Dt Mirzapur. Upper Palaeolithic [4.4] site yielding blades, points, scrapers and burins.

IAR 1970-1.

Khunkrakhopi, Dt Midnapur. Microliths (of unspecified nature) and flakes.

IAR 1961-2.

Khuntagaon, Dt Sundargarh. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1957-8.

Khuntitoli, Dt Ranchi, a hamlet close to the subdivisional town of Khunti, with a large number of Megalithic burials [4.17.4], their capstones flush with the surface, one of them excavated by S.C. Ray on behalf of the ASI (IAR 1965-6, p. 10). A secondary pit was dug at the centre of a large but shallow ovalish pit in which grave

goods—pottery and ornaments—were placed; whereafter the pit was filled with earth to form a low cairn. A few pots were again placed and then the capstone, 2.44 × 2.42 × 1.10 m, not completely covering the pit, was placed on two smaller boulders, leaving a gap between it and the earth-filling. A lidded urn placed in a depression in the pit near the centre and 37 other jars, more than half a dozen of them with pieces of human bones, seemingly charred, were the ceramic contents of the burial. None of them was of the Black-and-red Ware [11.15.3]. There were a few beads of agate, coral, red paste, copper and bronze and a copper/bronze bangle. There was no iron or any datable object. Nor was there anything associating the megalith with the Asura sites [14.4; also SARADKEL]. The indications were that the burial was a post-cremation one and perhaps communal in nature.

Megalithism in Chota Nagpur [4.17.4] is of uncertain date and menhirs are erected even to this date, some of them in the nature of Christian tomb-stones with the sign of the cross.

—A. GHOSH

Khupti. See PRAVARA VALLEY.

Khurda, Dt Nagaur. Copper Hoard [4.11] site. See 9.2. (same as KHURDI?)

Khurdhan, Dt Mirzapur. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1970-1.

Khurdi, Dt Nagaur. Copper Hoard [4.11] consisting of a flat copper axe, a bar celt, thin curved blades and a channel-spouted bowl. (Same as KHURDA?)

IAR 1960-1.

Khurja, Dt Bulandshahr. PGW [11.14]. Grey ware, Śunga-Kushan red ware and medieval ware.

IAR 1964-5.

Khurampur, Dt Saharanpur. Śunga-Kushan and medieval wares.

IAR 1964-5.

Khuruhan, Dt Varanasi. Black-and-red ware (of unspecified nature).

IAR 1962-3.

Khushiarghat-ki-Pahari, Dt Rewa. Painted rock-shelters [13].

IAR 1963-4.

Khustikurri, Dt Birbhum. Black-and-red ware (of unspecified nature).

IAR 1967-8.

Khutiya, Dt Santal Parganas. Microliths and black-and-red ware (both of unspecified nature).

IAR 1963-4.

Khutwanda, Dt Chandrapur. Early (Lower Palaeolithic [4.2]) and Late Stone (Mesolithic [4.5]) Age tools.

IAR 1970-1.

Khyad, Dt Bijapur. Lower Palaeolithic [4.2] site.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 131. Joshi, R.V., 1955, *Pleistocene Studies in the Malaprabha Basin*, Poona & Dharwar, p. 33.

Khydgi, Dt Bijapur. Black-on-red painted Chalcolithic [4.14.3] pottery. See BALLOLLI.

IAS 1957-8.

Kibbanahalli, Dt Tumkur. Lower Palaeolithic [4.2] site.

Seshadri, M., 1956, *Stone-using Cultures of Pre- & Proto-historic Mysore*, London, pp. 14-5, 36.

Kijeour, Pondicherry. Megalithic [4.17.9] site.

Casal, J.M., 1956, *Sites urbains et Sites funéraires des Environs de Pondicherry-Vinampnam-Mutrapaleon-Soutokeny*, Paris.

Kilaipatti, **Kirapatti**, Dt Salem. Ten dolmens [4.17.9].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras, 1, p. 198.

Kilakudipatti. See KALAKKUDIPATTI.

Kilaiyur, Dt Pudukkottai. Megalithic [4.17.9] site. Also a structure regarded as dock was uncovered, with remnants of eight large visible posts. There was a punch-marked coin [3.1].

Malony, C., 1976, in Stein, B., ed., *Essays on s. India*, Delhi. *Manual of Pudukkottai State*, 1, 1944, pp. 515-8. IAR 1963-4.

Kil Ambur, Dt Tirunelveli. Burial urns [4.17.9] with bones.

ASI-AR, 1936-7.

Kilanattam, Dt Tirunelveli. Megalithic [4.17.9] site.

ASI-AR 1902-3.

Kilangathur, Dt Madurai. Sepulchral pottery urns.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras, 1, p. 296.

Kilanur. See KIRANUR.

Kilaparai, Dt Salem. Three dolmens [4.17.9].

Sewell, R., *Antiquarian Remains in the Presidency of Madras*, Madras, 1, p. 198. ASI-AR 1936-7.

Kilarman, Dt Fatehpur. Site with NBPW [11.16].

IAR 1958-9.

Kilkambi, **Kilbambhi**. Dt Kolar. Megalithic stone circles [4.17.8].

IAR 1971-2; 1972-3.

Killanattam, Dt Tirunelveli. Megalithic [4.17.9] site the usual kinds of urn burials having their complement of smaller ceramic wares, ornaments, iron weapons, utensils, bronze bowls etc. See ADICHANALLUR.

ASI-AR 1903-4.

Killanur, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 1, pp. 515-8.

Killikottai, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 1, 1, pp. 515-8.

Killiyur. See KAVERIPATTINAM.

Kil Mondambadi, Dt Salem. Iron implements and fragments of earthen ware were found at a burial place.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Kilpattam, Dt Tirunelveli. Megalithic [4.17.9] site.

ASI-AR, 1936-7, p. 72.

Kilpauk¹, Dt Madras. Prehistoric remains consisting of urn burials, pots and other objects were discovered in the garden of a private bungalow on Hall's Road at Kilpauk in Madras. Excavation brought to light a few large urns, a number of pottery vessels of black polished

ware, a highly polished black pottery figurine representing a bird, a small iron hoe blade and an iron rod besides other small objects. A sarcophagus [12.9] of the ADICHANALLUR type standing on six pairs of short legs was also found.

ASI-AR 1934-5

Kilpauk², Dt Madurai. Earthenware sarcophagus [12.9] and urns were discovered.

ASI-AR 1934-5; 1936-7.

Kilperumpallam, Dt Thanjavur. Megalithic [4.17.9] and early historical [4.18.11] site.

IAR 1961-2.

Kil-puliyur. See PULIYUR.

Kilsengalpadi, Dt Salem. Twenty dolmens [4.17.9].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras ASI-AR 1936-7.

Kilvelur, Dt Thanjavur. Megalithic [4.17.9] Black-and-red Ware and crude unslipped red ware.

IAR 1964-5.

Kilvenpakkam, Dt N. Arcot. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAR 1964-5.

Kindarkhera (21°48'; 69°33'), Dt Junagadh. Late Harappa [4.10] site assignable to Pds II B and II C of RANGPUR on the basis of the ceramic types and painted designs. (Same as following?).

AI, 18 & 19, 1962 & 1963, p. 206.

Kinner Kheda, Dt Junagadh. Sites of Harappa culture [4.9] were discovered. (Same as preceding?).

IAR 1955-6.

Kiradkot, Dt Jaipur. PGW [11.14] and Kushan red wares.

IAR 1972-3.

Kiraipattai, Dt Dharmapuri. Megalithic [4.17.9] site.

IAR 1969-70.

Kiramanda, Dt Kolar. Megalithic [4.17.8] site.

Information from C. Krishnamurthy through A. Sundara.

Kirangattur, Dt Madurai. Megalithic [4.17.9] site at a distance of 400 m from the village, yielding sepulchral urns of terracotta.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Kiranur, **Kilanur**, Dt Dharmapuri. 400 m to the s. of the village is a group of ten dolmens [4.17.9] and close by another group of 47.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras. ASI-AR, 1936-7.

Kiraparai, Dt Dharmapuri. Megalithic sites with dolmens [4.17.9].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Kirapatti. See KILAIPATTI.

Kiratpur, Dt Bulandshahr. OCW [11.5] site.

S. Asian Arch., 1973, Leiden, 1974, p. 54.

Kirgaon, Dt E. Nimar. Microliths (of unspecified nature).

IAR 1958-9.

Kirkumbadi, Dt N. Arcot. Lower Palaeolithic [4.2] tools.

Footo, R.B., *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Kirmanda, Dt Kolar. Extensive mound yielding Megalithic [4.17.8] Black-and-red Ware [11.15.3] and red ware.

IAR 1970-1.

Kirmiti, Dt Chanda. Late Stone Age (Mesolithic [4.5]) tools.

IAR 1962-3.

Kirnahar, Dt Birbhum. Microliths and sherds of black-and-red ware (both of unspecified nature) and lustrous red ware.

IAR 1963-4.

Kirsengalpadi, Dt Dharmapuri. Megalithic [4.17.9] site.

Footo, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 198.

Kirtinagar, Dt Sehore. Late Stone Age (Mesolithic [4.5]) tools.

IAR 1964-5.

Kirvada, Dt Dhule. Abbevilio Acheulian handaxes, cleavers, discoids, scrapers, etc., made on trap and quartzite together with pebble tools [4.2].

IAR 1957-8.

Kirwai, Dt Vidisha. A large number of Lower Palaeolithic [4.2] pebble tools, choppers, handaxes, and cleavers were found on the surface on the bank of the Betwa. The tools, of brown sandstone pebbles, were generally rolled, but the handaxes and cleavers, of red sandstone, were fresh.

IAR 1959-60.

Kisara, Dt Krishna. Pottery of the early historical period [4.18.10].

IAR 1961-2.

Kishanpur, Dt E. Nimar. Microlith (of unspecified nature).

IAR 1960-1.

Kishanpur Nagrota, Dt Udhampur. Terrace 3 of the river Tawi just below Kishanpur Nagrota yielded a few Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1971-2.

Kishtapur, Dt Purulia. Microliths (of unspecified nature).

AIR—1959-60.

Kistapuram, See YELLESWARAM.

Kitadi, Dt Chanda. Palaeolithic (of unspecified nature) site.

IAR 1959-60.

Kithur, Dt Belgaum. Neolithic [4.6.9] site.

IAR 1968-9.

Kittur, Dt Belgaum. Chalcolithic [4.14.8] and Megalithic [4.17.8] site.

Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 89-90.

Kiwala, See GODAVARI VALLEY.

Koba (21°45'; 70°50'), Dt Rajkot. Post-Harappa site

corresponding to RANGPUR II C.

AI, 18 & 19, 1962 & 1963, p. 206.

Kochedega, Dt Ranchi. Microliths (of unspecified nature).

IAR 1963-4.

Kochhadai, Dt Madurai. Mound with remains of ancient habitation. See VAIGAI RIVER.

IAR 1957-8.

Kodahalli, Dt Mysore. Megalithic cist burials [4.17.8].

IAR 1961-2.

Kodaikanal, Dt Madurai. Port-holed cists [4.17.8] were found about 25 km from Kodaikanal.

AI, 4, 1947-8, p. 306.

Kodanad¹, Dt Ernakulam. Terracotta figurines consisting of the heads of men and torso of a woman and parts of horns possibly of a bull were found in close association with Megalithic [11.15.3] potsherds.

IAR 1963-4.

Kodanad², Dt Nilgiri. Megalithic [4.17.9] sites with cairns.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Kodanayakanadodi, Dt Mysore. Megalithic [4.17.8] cist burials.

IAR 1961-2.

Kodangipalayam, Dt Coimbatore. Megalithic cairn circles [4.17.9].

IAR 1960-1.

Kodangipatti, Dt Madurai. Neolithic [4.6.10] celts with pointed butt and oval cross-section were found on the bank of the Teni.

IAR 1960-1.

Kodanhalli, Dt Kolar. Megalithic [4.17.8] stone circles.

IAR 1970-1.

Kodar, Dt Mainpuri. PGW [11.14] and NBPW [11.16] site.

IAR 1960-1.

Kodanur, Dt Trichur. Megalithic [4.17.10] site.

IAR 1966-7.

Kodasan, Dt Ambala. PGW [11.14] site.

IAR 1964-5. Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 123.

Kodawari, Dt Allahabad. Early Stone Age (Lower Palaeolithic [4.2]) factory site.

IAR 1969-70.

Kodekal (16°21'; 76°25'), Dt Gulbarga, with an ash-mound [14.3], which may not be grouped under the lower Deccan Neolithic culture [4.6.9], discovered by Mahadevan in the course of his geological survey of the area (Mahadevan, 1941, p. 160). The mound lies about 4 km s.-e. of the village and 8 km from the left bank of the Krishna. It is located in a narrow picturesque valley enclosed by granite hills; a modern temple of Halakappa stands close to the edge of the mound. According to Mahadevan the mound measured 45.7 m in diameter and 4.6 m in height. He noticed a stone circle on its top and obtained pottery, animal bones and rubber-stones

from the site.

As part of a comprehensive work on the Neolithic culture of the Shorapur doab the site was reinvestigated by the writer during the year 1966-7 (Paddayya, 1973). The mound was found to be oval on plan, measuring 36.6 m in diameter and 3.6 m in height. No traces could be found of the stone circles referred to by Mahadevan; instead, the top of the mound housed a recent mortar platform used for threshing corn. The cultural material from the surface includes pottery of red and grey fabrics and lithic artefacts of the pecked and ground and blade-tool industries, all characteristic of the Neolithic culture of the lower Deccan. Further a factory site of the blade industry and traces of habitation (saddle querns [6.19] and chert artefacts) have been found on the terraces located on the summits of granite hills surrounding the ash-mound.

A trial trench, 3.66 × 3 m, in the n.-e. part of the mound had revealed the following stratigraphy (from top downwards): layer 1, scoriaceous slag (46 cm); layer 2, dark-brownish soil (41 cm); layer 3, scoriaceous slag (1.27 m); layer 4, variegated dark-brownish soil (1.17 m); layer 5, band of powdery *muram* (7 to 10 cm thick); layer 6, greyish/black gravelly soil (25 cm); and layer 7, natural soil represented by *muram*.

Layers 1 to 6, more particularly 2, 4 and 6, have yielded typical Neolithic cultural debris comprising pottery of red and grey fabrics, including some painted sherds, blade artefacts of chert, pecked and ground stone tools and a few bone artefacts; objects of the Iron Age and early historical period are absent. The ¹⁴C date of 2335 B.C. for a sample of charcoal from layer 4 fully confirms the Neolithic age of the site.

It may be inferred that as the layers of brownish soil yield cultural material in considerable quantities, they represent periods of human occupation. On the other hand, layers 1 and 3, consisting of lumps of scoriaceous slag, very poor in artefacts, mark distinct periods of cow-dung accumulation and burning. Thus the Kodekal ash-mound witnessed three periods of human occupation and two of cow-dung burning. This phenomenon of repeated human occupation and cow-dung burning has also been noted at UTNUR, KUDATINI, KUPGAL, PALAVOY and other ash-mounds. However no satisfactory explanation has so far been offered for the cow-dung accumulations and their subsequent burning.

The animal bones recovered from the occupational layers offer a good picture of the food economy of the inhabitants. Studies have made known the presence of six domestic forms—the cattle, buffalo, goat, dog, ass and fowl—and an equal number of wild species—gazelle, spotted deer, *barasinga*, common rat, monitor lizard and bony fish (Paddayya, 1973, pp. 92-5; Clason, 1977, p. 249). Layer 4 has also yielded carbonized

Zizyphus seeds [2.4].

Clason, A.T., 1977, in *Eastern Anthropologist*, 30. Mahadevan, C., 1941, in *Jour. Hyderabad Geological Survey*, 4, pp. 102-61. Paddayya, K., 1971, in *Antiquity*, 45, pp. 134-8; 1973, *Investigations into the Neolithic Culture of the Shorapur Doab, s. India*, Leiden.—K. PADDAYYA

Kodepur, Dt Chandrapur. Early and Late Stone Age (Lower Palaeolithic [4.2] and Mesolithic [4.5]) sites.

IAR 1970-1.

Kodimatti, Dt Gulbarga. Megalithic [4.17.8] sites with stone circles.

Jour. Geological Survey of Hyderabad, 4, 1, p. 159.

Kodri, Dt E. Nimar. Microliths (of unspecified nature).

IAI 1957-8.

Kodumanal, Dt Coimbatore. Russet-coated Painted Ware [11.22].

IAI 1960-1.

Kodumon, Dt Quilon. Cairn circles and cists [4.17.10].

IAI 1961-2.

Kodumur hill, Dt Kurnool. Neolithic [4.6.8] cores and flakes.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Kodungalur, **Kodungallur**, Dt Cochin (?). Small-scale excavation revealed objects datable from the 1st to the 10th centuries. See CRANGANORE.

AR Arch. Dept Cochin State, 1947.

Kodungath Desom, Dt Malappuram. Megalithic [4.17.10] site with rock-cut caves.

IAI 1971-2.

Kodur, Dt Chikmagalur. Lower Palaeolithic [4.2.5] site.

Seshadri, M., 1956, *Stone-using Cultures of Pre- & Proto-historic Mysore*, London, p. 15.

Koduvayur, Dt Malappuram. In the Koduvayur-desham there are 15 *topikals* [4.17.10] and two other rude stone monuments. In Munnur-desham are two other *topikals*.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras. IAR 1970-1.

Kodvad, Dt Ahmadnagar. Microliths (of unspecified nature).

IAI 1958-9.

Kohala, Dt Mandsaur. Lower Palaeolithic [4.2] site.

IAI 1965-6.

Kohari, Dt Ambala. PGW [11.14] site.

IAI 1964-5.

Kohbar, Dt Mirzapur. Rock paintings [13] of the 4th to 10th centuries.

Ghosh, M., 1932, *Rock Paintings & other Antiquities of Prehistoric and Later Times*, Mem. ASI, 24, p. 16.

Kohka, Dt Mandla. Middle Stone Age (Middle Palaeolithic [4.3]) tools and microliths (of unspecified nature).

IAI 1963-4.

Kohkadi, Dt Ahmadnagar. Tools of Series II (Middle Palaeolithic [4.3] and microliths (of unspecified nature). possibly a factory site. Sherds of thick grey ware were also picked up.

IAI 1960-1.

Kohond, Dt Karnal. Red Polished Ware [23] site.

IAI 1960-1.

Kohuna, Nagaland (Dt unspecified). Pointed-butt polished stone axes around and n. of Kohuna.

AI, 4, 1947-8, p. 286.

Koilkuntla, Dt Kurnool. Early historical site [4.18.10] yielding sherds of red and red-slipped wares.

IAI 1966-7.

Koilmedu, Dt Madurai. Megalithic [4.17.9] habitation site.

IAI 1956-7.

Koiran, Dt Jaunpur. NBPW [11.16] site.

IAI 1970-1.

Koisaram, Dt Hyderabad. Site with 21 stone circles [4.17.7] each 7 to 11 m in diameter.

IAI 1958-9.

Kojikheri, Dt Damoh. In the basal cemented conglomerate in the basin of the Sonar were found tools of the bifacial handaxe-cleaver facies [4.2], near by the upper gravels yielded tools of the flake-point-scraper complex [4.3] on chert and jasper.

IAI 1957-8.

Kokireni, Dt Krishna. Megalithic [4.17.7] site with stone circles.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Kokkanur, Dt Chitradurga. Megalithic [4.17.8] site.

Information from A. Sundara.

Kokkarapatti, Dt Dharmapuri. Megalithic [4.17.9] cairn circles.

IAI 1970-1.

Kokle, Dt Dhule. Late Stone Age (Mesolithic [4.5]) tools.

IAI 1962-3.

Kokni-pada, Dt Dhule. Lower Palaeolithic [4.2] tools and microliths (of unspecified nature).

IAI 1959-60.

Kola ala. See ISMAIL.

Kolakambe, Dt Nilgiri. Megalithic [4.17.9] site.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 76.

Kolar, Dt Kolar. Megalithic [4.17.8] site with some cist circles. Pale-grey ware and Black-and-red Ware [11.15] have been found in the ancient gold mines of the Champion reefs.

Seshadri, M., 1960, *Report on the Jadigenahalli Megalithic Excavations*, Bangalore, p. 2, Maloney, C., 1976, in Stein, B., ed., *Essays on S. India*, Delhi.

Kolara, Dt Chanda. Palaeolithic (of unspecified nature) site.

IAI 1959-60.

Kolavallur, Dt Cannanore. Rock-cut caves possibly Megalithic [4.17.10].

IAI 1959-60.

Kolbarti, Dt Dhanbad. A dozen copper tools, probably celts [4.11].

Patna Museum collection. Information from S. Asthana.

Kolda, Dt Dhule. Microliths and sometimes neoliths were found in association with the black-on-red painted pottery. Alongside was also found coarse grey ware, similar to that from the Chalcolithic levels at BRAHMAGIRI and BAHAL. See DHAMDAR.

IAI 1957-8.

Koldiha, Dt Purulia. Microliths (of unspecified nature).

IAI 1959-60.

Koldihwa, **Koldihawa**, (24°54'; 82°2'), Dt Allahabad, on the left bank of the BELAN in Meja Tahsil, excavated by the Univ. of Allahabad under the direction of G.R. Sharma (IAI 1973-4, p. 26). Of the extensive mound (500 × 200 m) the e. and s. portions were settled upon by the Neolithic [4.6.3] people, while occupation on the w. portion started with the Chalcolithic [4.14.2]. The pottery of the Neolithic phase [11.1.2] was corded and incised ware of thick fabric, plain red ware and ill-fired crude black-and-red ware—all handmade, the first being predominant. The cord impression could have been produced by tortoise shell. The incised designs were criss-cross and zigzag oblique horizontal or vertical parallel lines. The red ware, both thick and thin, had an ochrous slip both internally and externally, some sherds having a rusticated external bottom. The types were: the shallow, deep, straight-sided and lipped bowl; vase with broad mouth and carinated neck; deep trough; storage jar; and vessel with tubular spout. Rice husk was embedded in the clay of a number of sherds. Rounded celts with flat sides and rectangular cross-section and microliths—parallel-sided blades, blunted blades and scrapers—on crypto-crystalline material formed the lithic tools. Fragmentary animal bones were also found. Burnt clay pieces with wattle and daub impressions were the only remains of domestic houses.

The occurrence of stray pieces of corded ware and small neolithic celts of basalt in the succeeding Chalcolithic phase may indicate a link with the Neolithic, but the black-and-red ware, black-slipped ware and red ware were new features. The pottery was wheel-turned and made of well-levigated clay, besides being of finer fabric (though quartz grains sometimes occurred) and better fired and better finished. The red ware showed a diversification of shapes; the bowl; shallow and convex-sided dish; plain and lipped basin; trough; footed and perforated vessel; and large storage jar. The black-slipped ware, some specimens comprising favourably with the NBPW [11.16], was represented by the bowl, sometimes pedestalled; dish; basin; and funnel-shaped lid. In the black-and-red ware were: the bowl, again sometimes pedestalled; dish; lipped and plain basin; small vase; straight-sided trough and funnel-shaped lid. Some red pots were painted in black and black-and-red ones in white, in the latter the paintings confined to the incisions.

Post-holes and burnt clay pieces with reed or bamboo incisions and floors or rammed earth and clods of burnt clay indicate the domestic architecture.

Chert and chalcedony cores, flakes, parallel-sided blades, some showing the crested-ridge technique [16.15.2], blunted-back blades, points, lunates and triangles were plenty. So also were bone objects—arrowheads, both tanged and socketed. Animal bones, seemingly of bovines, and cultivated rice indicate the food-habits of the people. Querns and mullers, copper pieces and beads of terracotta, shell and semiprecious stones were included in the cultural repertoire.

In the last phase, of the Iron Age, the pottery remained virtually the same, though the corded ware disappeared. An unsocketed axe and an arrowhead, together with crucibles [16.4] and iron slag [16.9.4], show the adoption of iron by the Chalcolithic people. Charred grains of wheat and *Phaseolus mungo* (mung) show the introduction of new cultivated grains in addition to rice, which continued. Stratigraphically connected with this phase were a large number of refuse pits.

The chronology of the three cultures represented at Koldihwa is not free from difficulties. While no ^{14}C date for the Neolithic occupation seems to be known, for the early Chalcolithic phase the two available dates, 4530 ± 185 and 5440 ± 240 B.C., are far too early for any Chalcolithic culture of India, and it has been wondered if the samples measured really belonged to the Chalcolithic levels or to the earlier Neolithic ones: even if that is true, the Koldihwa Neolithic itself would much antedate any other Neolithic culture of India, and this would involve *inter alia* the assumption that the site has the oldest record of the cultivation of rice in the world. On the other hand, a ^{14}C date for a sample, also from the lowest Chalcolithic level, reads 1440 ± 120 B.C. It has therefore been reasonably assumed that the beginning of the Chalcolithic culture of Koldihwa may be pushed back to the 2nd half of the 2nd millennium B.C., which is archaeologically quite acceptable.

Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad, pp. 107-19.—A. GHOSH

Koleri, Dt Cannanore. Rock-cut cave, possibly Megalithic [4.17.10].

IAR 1960-1.

Kolhapur, Dt Kolhapur. See BRAHMAPURI.

Kolhar¹, Dt Ahmadnagar. Tools of Series II (Middle Palaeolithic [4.3]).

IAR 1955-6; 1963-4.

Kolhar², Dt Bijapur. The site on the Krishna yielded tools of Series I and II (Lower and Middle Palaeolithic [4.2.3]) in the exposed gravel.

Progrss Rep. Kannada Res. Inst., 1953-7, p. 24. IAR 1955-6.

Kolhar-Khurd, Dt Ahmadnagar. Chalcolithic [4.14.6] and early historical [4.18.1] site.

IAR 1959-60.

Kolimigundla, Dt Kurnool. Late Stone Age (Mesolithic [4.5]) and early historical [4.18.10] site.

IAR 1964-5; 1965-6.

Kolisuta ($22^{\circ}4'$; $86^{\circ}40'$), Dt Mayurbhanj. Lower Palaeolithic [4.2] site. See KULIANA.

Bose, N.K., and Sen, D., 1948, *Excavations in Mayurbhanj*, Calcutta, pp. 59-61.

Kolkikalan, Dt Saharanpur. Late Harappa [4.10], OCW [11.5] and PGW [11.14] site.

IAR 1967-8.

Kollangulam, Dt Tirunelveli. Megalithic [4.17.9] site yielding funeral urns.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Kollanpatrai, Dt Madurai. Two small finely polished stone celts trapezoidal in shape and roughly oblong in transverse section and a broken hammer-stone were found.

IAR 1957-8.

Kolljar, Dt Bijapur. Lower and Middle Palaeolithic [4.2, 3] site.

Pappu, R.S., 1974, *Prehistoric Studies in the Upper Krishna Basin*, Pune, pp. 32-3.

Kollur¹, Dt Gulbarga. Middle Palaeolithic [4.3] and early historical [4.18.11] site.

IAR 1968-9.

Kollur², Dt S. Arcot. Port-holed cists [4.17.9] were found on the left bank of the Sonnaiyar.

Indian Antiquary, 5, 1876. Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Kolpalli, Dt Chanda. Early Stone Age [4.2] tools.

IAR 1961-2.

Kolur¹, Dt Dharwar. Early historical site [4.18.11]. See HANDIGNUR.

Kolur², Dt Gulbarga. Megalithic site with all surface indications destroyed, site not traceable.

Megalithic Tombs & other Remains in the Deccan, Hyderabad, 1941.

Komaranahalli, Dt Chiradurga. Site with Megalithic remains [4.17.8].

Foote, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 74.

Komaranapura, Dt Mysore. Neolithic [4.6.9] remains.

IAR 1960-1.

Komarapalayam, Dt Coimbatore. Megalithic [4.17.9] site.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras, p. 219.

Komri, Dt Aligarh. PGW [11.14] site.

IAR 1962-3.

Kon, Dt Mirzapur. Middle Stone Age (Middle Palaeolithic [4.3]) tools comprising blades, flakes, scrapers and cores and microliths consisting of simple and parallel-sided blades, blunted-back blades, lunates, burins, etc.

IAR 1962-3.

Konabetta Peak, Dt Nilgiri. Megalithic [4.17.9] site with cairns yielding an urn, a spearhead and some iron

implements.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Konchigeri, Dt Dharwar. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1960-1; 1961-2.

Kondahai, Dt Thanjavur. Megalithic [4.17.9] site.

IAR 1955-6.

Kondaipur, Dt Birbhum. Late Stone Age (Mesolithic [4.5]) site yielding scrapers, knives, awls, points, lunates, flakes, blades and cores.

IAR 1968-9.

Kondajji, Dt Hassan. Megalithic [4.17.8] site with stone circles.

Seshadri, M., *Stone-using Cultures of Pre- & Proto-historic Mysore*, London, p. 61.

Kondapeta, Dt Cuddapah. Early, Middle and Late Stone Age (Lower, Middle Palaeolithic [4.2, 3] and Mesolithic [4.5]) tools.

IAR 1964-5.

Kondapur, Dt Gulbarga. Dolmen [4.17.8].

IAR 1963-4.

Kondapur (17° 73'; 78° 1'), Dt Medak, 69 km w.-n.-w. of Hyderabad, bearing several mounds with 8 to 9 m of cultural deposit extending over 1 km and covering the adjoining village Terpol as well. A small adjacent stream feeds a small tank near by. Excavation was conducted by Yazdani on behalf of the Arch. Dept of Hyderabad during 1941-2 in the w. area of the mound. The material clearly indicates that Kondapur was an important town of the Āndhra-Sātavāhana period.

Religious domestic buildings reveal an architecture of a simple and plain type, built of brick of various sizes with mud mortar. The brick sizes are 55 × 30 × 7.5 cm for enclosure walls, 43 × 20 × 7.5 cm for small rooms and 50 × 50 × 7.5 to 7.6 cm for corner walls; wedge-shaped brick has been used for circular structures such as *stūpas*, *caityas*, wells, etc.

A building has been identified as a *stūpa* with a few cells around it. It is 5.80 m in diameter with a rubble core encased around it. A row of six cells 3 cm square with a narrow pavement has been traced, along with two small *caitya* halls with the usual apsidal ends and with rubble foundations of a *stūpa* in one of them. Another is a *stūpa* 4.6 m in diameter in the middle of a rubble courtyard and small cells and landing steps. A few underground chambers have also been identified. Six of them, three being double chambers with a central partition wall, range in depth from 1.5 to 7.6 m and are built of brick with rubble-paved floors. In two furnaces have been found coins and their moulds and some terracotta tiles. The material assemblage is rich and varied. The pottery is mostly utilitarian and comprises vessels of red ware, ware with criss-cross paintings, the Red-Polished Ware [11.23] and the Rouletted Ware [11.21], the last two

being rare. Incised or moulded decorations on red ware represent symbols of *tri-ratna*, *dharma-cakra*, chequer patterns and geometric designs and lotus and other flower motifs. The utilitarian ware bears slip on the outer surface of an even texture. Kaolin ceramics with slipped surface, a few of them even painted, have also been found.

The large collection of personal ornaments includes bangles of shell, copper, glass, terracotta and ivory with embossed and incised designs, a variety of amulets and pendants, ear and finger rings, etc. The beads are made of terracotta, shell, glass, faience, semiprecious stones such as amethyst, agate, carnelian, chalcedony, crystal, jasper, garnet quartz and beryl. In the beads, amulets and pendants are represented a number of Buddhist symbols such as *tri-ratna*, *pīṭa* leaf, *harmikā* of the *stūpa* and altar. Terracotta amulets [12.1] seem to have been very popular and the typical representations include the bull, *svastika*, *śrīvatsa*, Gaja-Lakṣmī motif, flowers designs such as lotus, etc.

Clay bullae [6.4] or medallions in imitation of Roman coins specially that of Tiberius (A.D. 14-37) suggest foreign influence as a result of trade. Among the carved ivory objects is one representing a realistically depicted scene with elephant and two men seated on it and a child and lady being forcibly carried. Iron implements and weapons include sickles, forks, hoes, knives, spear-heads, chisels, nails, etc.

Terracotta human and animal figurines [17] are typical of Āndhra-Sātavāhana art; an uncommon technique, found at other Sātavāhana sites as well, is the production of hollow figurines in the round out of double moulds, one for the back and another for the front. Kaolin, superior to clay in plasticity and hardness, is also used in the manufacture of terracottas. A few of them are painted in green, red and yellow and in some finger prints are visible.

Male and female figurines are represented with bold physiognomy and show sensitive modelling possessing thick eyes and oval face, exhibiting a typical coiffure and jewellery consisting of a crown on the head and ornamental plaits falling on the nape of the neck. Some have been identified as *yakṣas*, and the mother-and-child ones as *Hārītī*. A broken figurine has been regarded as mother goddess [12.6], while the best specimens have been identified as Bodhisattvas. Art of a high order showing a sense of perspective is seen in animal terracottas such as horses, lions, bulls and rams.

The coins include one in gold of Augustus (died A.D. 14) and a dozen silver, 50 copper and 100 potin and a number of lead ones. Some of them have been identified as those of Gautamīputra Śātakarṇi, Pulumāvi and Yajñaśrī Śātakarṇi.

The assemblage shows that Kondapur was a thriving

town from c. 100 B.C. to A.D. 200 with a marginal time-span of a century on both sides.

Ahmad, Khwaja M., 1950, *Inscribed & Rivetted Pottery from Kondapur*, Hyderabad. Dikshit, M.G., 1952, *Some Beads from Kondapur*, Hyderabad. Yazdani, G., 1940-1, in *AR Hyderabad Arch. Dept.*, 1940-1, pp. 16-8; 1941, in *Annals of the Bhandarkar Oriental Res. Inst.*, 22, pp. 171-85; 1960, *Early History of the Deccan*, London.—C. MARGABANDHU

Kondarajapalli, Dt Kolar. Megalithic [4.17.8] site.

Seshadri, M., 1960, *Report on the Jadigenahalli Megalithic Excavations*, Bangalore, p. 4.

Kondazi, Dt Trichur. Megalithic [4.17.10] site.

IAR 1972-3.

Kondghat, Dt Wardha. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1959-60.

Kondi, Dt Allahabad. Late Stone Age (Mesolithic [4.5]) and Megalithic [4.17.3] site.

IAR 1963-4.

Kongalnagaram, Dt Coimbatore. Megalithic [4.17.9] cists.

IAR 1960-1.

Konganahalli, Dt Kolar. Megalithic [4.17.8] site with stone circles.

IAR 1955-6. Seshadri, M., 1960, *Report on the Jadigenahalli Megalithic Excavations*, Bangalore, p. 4.

Kongarajapalli, Dt Kolar. Megalithic [4.17.8] site.

IAR 1955-6.

Kongarayakurichi, Dt Tirunelveli. Megalithic [4.17.9] site.

ASI—AR 1902-3.

Konnur¹, Dt Belgaum. Neolithic-Chalcolithic site with ash-mound [14.3]. Characteristic grey, blackish-grey and pinkish-buff wares, some micaceous and some with incised decorations, flakes, parallel-sided blades, saddle querns and bones were found.

Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 15-28.

Konnur², Dt Bijapur. Neolithic [4.6.9]-Chalcolithic [4.14.8] site.

IAR 1965-6. P.B. Desai Felicitation Vol., Dharwar, 1971, pp. 4-30.

Koonamoochi, Dt Trichur. Rock-cut caves [4.17.10] with Black-and-red Ware [11.15] and some rusted iron implements.

IAR 1960-1.

Koota, Dt Jammu. Pebble tools of Sohan tradition [4.2] and flakes were found on the terraces on the river Bei.

IAR 1966-7.

Kootampuli, **Koothankuli**, **Kuttampuli**, **Kuthankuli**, Dt Tirunelveli a *teri* [9.5] site. The tools may be classified as flakes and fragments, horse-hoof scrapers, discoids, lunates, arrowheads, simple points, single-trimmed points, asymmetrical points, bifacial points and double-trimmed points. See SAWYERPURAM, KUTTAMPULI.

AI, 12, 1956, p. 9.

Kop, Dt Bijapur. Microliths (of unspecified nature).

IAR 1962-3.

Kopagarh, Dt Saharsa. Structural remains and anti-

quities of the Pāla period.

IAR 1961-2.

Kopai, Dt Birbhum. Middle Palaeolithic [4.2] and Upper Palaeolithic [4.3] tools.

IAR 1965-6, p. 58.

Kopai Valley. See BAKRESWAR VALLEY.

Koparde, Dt Satara. Middle (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) tools.

IAR 1962-3.

Kopare, Dt Ahmadnagar. Tools of Series II (Middle Palaeolithic [4.3]).

IAR 1955-6.

Koparli, Dt Dhule. Chalcolithic [4.14.9] site. Fragment of a miniature black-and-grey jar was painted with a whitish pigment on the interior of the mouth with oblique short strokes. A rich collection of microliths—fluted cores, parallel-sided and occasionally backed blades, points, crescents and crested-ridge flakes—was made. See UDHAMGARH.

IAR 1958-9.

Kopbal, Dt Raichur. Port-holed cists [4.17.8] are reported, as also Neolithic [4.6.9] grey ware of MASKI fabric, parallel-sided blades of chert and Megalithic Black-and-red Ware [11.15].

AI, 4, 1947-8, p. 308. IAR 1968-9.

Kopergaon, Dt Ahmadnagar. Painted pottery with microliths, probably Chalcolithic [4.14.6].

AI, 9, 1953, p. 68.

Kopia, Dt Basti. NBPW [11.16] site.

IAR 1963-4.

Koppa, Dt Mysore. Megalithic [4.17.8] cist burials.

IAR 1961-2.

Koradih, Dt Nagpur. Flakes and flake-blades with plain and narrow striking platform were picked up from a seemingly factory site 16 km n. of Nagpur.

IAR 1959-60.

Koramangala, Dt Bangalore. Megalithic [4.17.8] site with cist-circles.

Seshadri, M., 1956, *Stone-using Cultures of Pre- & Proto-historic Mysore*, London, p. 61.

Korat, Dt Dhule. Palaeolithic tools and microliths (both of unspecified nature) and Chalcolithic [4.14.6] remains. Red Polished Ware [11.23] was also picked up. For Chalcolithic pottery see SAWALDA.

IAR 1958-9.

Korer, Dt Bharatpur. PGW [11.14] and grey ware site.

IAR 1970-1.

Koria, Dt Rewa. Late Stone Age [Mesolithic [4.5]] site.

IAR 1963-4.

Kori-ka-kot, Dt Ghazipur. Black-and-red ware (of unspecified nature).

IAR 1963-4.

Korkai, Dt Tirunelveli, ancient Pāṇḍyan port, mentioned for its pearl fishery in the Saṅgam literature, a fact supported by the find of pearl oysters at the site. When first excavated by Caldwell it revealed a few urns (Caldwell, 1887). The Dept of Arch., Tamil Nadu, un-

dertook excavation here in 1968-9 (*IAR* 1968-9, pp. 32-3) and revealed a sequence of cultures ranging from the Megalithic [4.17.9] to the present times. It yielded the Megalithic Black-and-red Ware [11.15.3] and sherds of black-slipped, plain red, red-slipped ware and the Rouletted Ware [11.21].

Out of five cuttings, KRK-1 to 5, KRK-1 revealed a Megalithic urn at a depth of 2.22 m. Also significant is the discovery of a coin of Rājārāja from the upper levels. The finds of KRK-2 and 3 include respectively Megalithic urns containing post-exhumation bones and foundations of a structure belonging to the medieval period. In KRK-4 a few potsherds inscribed in Brāhmi letters of the 1st century A.D. and a stepped brick platform with three terracotta rings (soakage jars) below are noteworthy. For the setting of these rings was dug a foundation trench which was filled later with conch-shells, potsherds, grit, etc. by way of reinforcement.

Two sets of soakage jars have been noticed at KRK-5 along with inscribed potsherds and pearl oysters. Sherds with graffiti [20.1], iron and copper objects, perforated terracotta tiles [14.6.5], crystal beads, terracotta torsos, beads, circular and triangular discs [6.7.3], bone ornaments for ear-lobes, arrowheads, etc., comprise the other finds of the site.

Caldwell, R., 1887, in *Indian Antiquary*, 6, pp. 279.—A. BANERJI

Korla Khera, Dt Gurgaon. PGW [11.16] and early historical [4.18.1] site.

Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.

Kornapara, Dt Palghat. Megalithic [4.17.10] site with 35 megaliths.

IAR 1972-3.

Korttalayar, Kortalayar valley, Dt Chingleput. See ATTIRAMPAKKAM, VADAMADURAI.

Korvikop, Dt Belgaum. Middle Palaeolithic [4.3] site.

IAR 1972-3.

Korwa, Dt Palamau. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1971-2.

Korwai, Dt Dhule. Lower Palaeolithic [4.2] tools on the river Betwa.

IAR 1958-9.

Kosam, See KAUSĀMBI.

Kosambi, Dt Chanda. Palaeolithic [4.2] site.

IAR 1959-60.

Kosigi, Dt Bellary. Port-holed cists [4.17.8].

Taylor, M., 1853, in *Jour. Bombay Branch Royal Soc.*, 4, pp. 380-429; reprinted in *Megalithic Tombs & Other Remains in the Deccan*, Hyderabad, 1941.

Koskangarha, Dt Allahabad. Middle Stone Age (Middle Palaeolithic [4.3]) factory site and Late Stone Age (Mesolithic [4.5]) site in the BELAN VALLEY. Also Megaliths [4.17.3] and painted rock-shelter [13]. See TUNDIARA VALLEY

— *IAR* 1963-4; 1969-70; 1970-1. Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad, p. 37.

Kot¹, Dt Bulandshahr. Grey ware site.

IAR 1963-4.

Kot², Dt Ghazipur. NBPW [11.16] and other early historical pottery.

IAR 1964-5.

Kota¹ (22°10'; 69°42'), Dt Jamnagar. Harappa [4.9] and late Harappa [4.10] site, affiliated to RANGPUR II A and B.

AI, 18 & 19, 1962 & 1963, p. 206.

Kota², Dt Jaunpur. NBPW [11.16] site.

IAR 1963-4.

Kota³, Dt Mirzapur. Microlithic [4.5] site on the s. bank of the Betia Nadi.

AI, 7, 1951, pp. 40-65. Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad, p. 54.

Kota⁴, Dt Saharanpur. Late Harappa [4.10] and OCW [11.5] site.

IAR 1967-8.

Kotabarahi, Dt Jaunpur. Site with NBPW [11.16].

IAR 1963-4.

Kotada¹ (22°12'; 70°22'), Dt Jamnagar. Late Harappa [4.10] site corresponding to RANGPUR II B.

AI, 18 & 19, 1962 & 1963, p. 206.

Kotada², Dt Jhalawar. Tools of Series II (Middle Palaeolithic [4.3]) were found in the gravel beds of the Bhadar.

IAR 1958-9.

Kotada³, (23°18'; 70°06'), Dt Kutch. An extensive mound yielding Harappa [11.3] red, buff, black-and-red, 'reserved slip' and red-slipped cream wares. Almost all the shapes are comparable with those from RANGPUR II A excepting the bowl in black-and-red ware which correspond to RANGPUR III. The deep bowl with beaded rim is akin to that from Cemetery R 37 of Harappa. Chalcedony flakes and shell bangles were some of the other finds. Coarse red ware akin to the RANG MAHAL Ware [11.24] is also found.

IAR 1965-6. Chakrabarti, D.K., 1975-6, in *Purātattva*, 8, p. 159.

Kotada⁴ (23°22'; 69°26'), Dt Kutch. Three mounds are located at the site of which Kotada Bhadli-II and -III are Harappa [4.9] and Kotada Bhadli-I is late Harappa [4.10] and transitional. The red ware of Kotada Bhadli-II and -III is comparable with RANGPUR II. There is also a buff ware. Other finds include cores and flakes in chalcedony and chert blades. Some of the cores were utilized as scrapers. Some sherds of coarse red ware akin to RANG MAHAL Ware [11.24] are also found. Kotada Bhadli-I has red-slipped cream ware with evolved Harappa shapes and a coarse red ware akin to the RANG MAHAL Ware [11.24].

IAR 1965-6.

Kotada⁵, Dt Rajgarh. Site with bifacial handaxes [4.2].

IAR 1957-8.

Kotadi, Dt Kutch. Harappa [4.9] site yielding the reserved slip ware.

Chakrabarti, D.K., 1975-6, in *Purātattva*, 8, p. 159.

Kotadibha, Dt Visakhapatnam. Traces of mud fortification ascribable to the medieval period, besides sherds of the black-and-red ware and black-polished and dull-red wares.

IAR 1961-2.

Kotagiri, Dt Nilgiri. Port-holed cists [4.17.9].

Sewell, R., *Antiquarian Remains in the Presidency of Madras*, Madras.

Kota-ki-Mari, Dt Jaunpur. NBPW [11.16] site.

IAR 1963-4.

Kotamda, Dt Surat. Lower [4.2] and Middle Palaeolithic [4.3] and Mesolithic [4.5] site.

IAR 1967-8.

Kotara-Nala, Dt Guna. A mixed assemblage of tools ranging from Lower [4.2] to Upper Palaeolithic [4.4] was discovered from the bed of the Nala. The Lower Palaeolithic component included one specimen each of handaxe, scraper and cleaver. The major portion consisted of Upper Palaeolithic tools, including side-, end- and hollow-scrappers, points, burins, tortoise cores and a few blades.

IAR 1972-3.

Kotasur, Dt Birbhum. Black-and-red Ware (of unspecified nature) and early historical site [4.18.5] yielding an e. form of the NBPW [11.16] and a silvery grey ware of comparable shapes. See 4.14.4.

IAR 1962-3; 1965-6.

Kotawa, Dt Gorakhpur. Black-and-red ware (of unspecified nature).

IAR 1963-4.

Kotegal, Dt Raichur. Chalcolithic [4.14.8] site. Also pointed-butt polished stone axe.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras. *AR Hyderabad Arch. Dept.*, 1935-6, pp. 1-20. *AI*, 4, 1947-8, p. 296.

Kotekalludrug hill, Dt Bellary. Neolithic [4.6.9] site.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, pp. 77-8.

Koth (22°38'; 72°18'), Dt Ahmadabad. 20 km n.-e. of LOTHAL is a low-lying mound. The pottery is identical with that from Lothal A. A complete handled bowl in micaceous red ware is an important find. A 1 m thick deposit of flood loam and fine sand caps an over 2 m thick occupation debris of the Harappa period [4.9]. A heavy flood of long duration was responsible for the final destruction of the site.

AI, 18 & 19, 1962 & 1963, p. 206.

Kotha (24°6'; 78°6'), Dt Vidisha. A large number of pebble tools, choppers, handaxes and cleavers [4.2] were found at Kotha, 3 km off Mandi-Bamora railway station.

IAR 1959-60.

Kothali, Dt Dhule. Lower and Middle Palaeolithic

[4.2, 3] site, also with microliths [4.14.6] and sometimes neoliths [4.6] found in association with the black-on-red painted and ochre-coloured pottery. Alongside was found a coarse grey ware, similar to that from the Chalcolithic levels of BRAHMAGIRI and BAHAL. The Chalcolithic [4.14.6] culture was superimposed successively by cultures with the typical black-and-red ware and a coarse red-slipped ware, the latter assignable to the Sātavāhana period. See DHAMDAI, KIRVADA.

IAR 1957-8; 1958-9.

Kothari, Dt Ujjain. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1971-2.

Kotharia¹, Dt Rajkot. Early historical [4.18.2] site.

IAR 1958-9.

Kotharia², Dt Udaipur. Black-and-red ware. See KADUKOTA.

IAR 1957-8.

Kothavan, Dt Jaunpur. Early historical [4.18.3] finds and an image of Viṣṇu assignable to the 11th century.

IAR 1962-3.

Kothurna, Dt Bhandara. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1959-60.

Kotia, Dt Allahabad. Cairn circles and dolmenoid cists [4.17.3].

IAR 1962-3.

Kotigehar, Dt Tumkur. Iron-smelting site.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 76.

Kotihal, Dt Dharwar. Stone circles [4.17.8] with the typical Black-and-red Ware [11.15] and early historical material.

IAR 1959-60.

Kotiya, Dt Gorakhpur. Black-and-red Ware (of unspecified nature).

IAR 1963-4.

Kot-khera, Dt Bulandshahr. PGW [11.16], Black-slipped Ware [11.13], red ware of the Śunga-Kushan period and medieval ware.

IAR 1966-7.

Kotla (31°48'; 76°21'), Dt Kangra. Situated on the Chumar nullah, a tributary of the Beas, the site yielded choppers, discoids cleavers, flakes and cores [4.2]. For the first time it has provided a clear evidence of the presence of the handaxe industry in the Beas valley at an altitude of about 570 m which is about 60 m above the Beas bed. See BEAS-BANGANGA VALLEY.

IAR 1966-7.

Kotla Nihang Khan (30°57'; 76°32'), Dt Rupnagar (formerly in Dt Ambala), lying about 2 km s.-e. of ROPAR on the eroded and flat Siwalik formations. The ancient habitation here can be divided into two sectors, w. and e. The former underlies the present village, while the latter is unencumbered but has been tilled heavily. The ancient mound has been badly cut up by channels

and gulleys and has assumed an irregular shape measuring approximately 260 m e.-w. and 100 m n.-s. at the widest.

Vats laid some trenches here in 1929 (Vats, 1940) and recovered, apart from the typical Harappa pottery [11.3] and brick, a tiny chert weight, a terracotta wheel, triangular and circular cakes [6.27] and fragments of a faience ring and a bangle. He surmised that the value of his discovery lay in extending the zone of the Indus civilization [4.9] to the Sutlej-Yamuna doab.

Kotla Nihang Khan continued to be regarded as an outpost of the Harappa culture till in the context of the unearthing of a full complement of Harappa objects at ROPAR and the discovery of several Harappa or related sites in its neighbourhood, a revaluation became necessary. The site was excavated in 1955 by the writer on behalf of the ASI. In all 11 small sondages were made, six on the e. open land and five inside the village.

Earlier some extremely fragmentary PGW sherds [11.14] had been picked up from the village, but this ware was totally absent in the excavated deposits. Apparently the PGW people camped here only briefly. The cuttings revealed three Pds: Harappa, Kushan and medieval.

Pd I suggests two phases. The e. sector, with an average depth of 1 m, abounds from the present surface downward in mature Harappa pottery, including such distinctive shapes as the dish-on-stand, scored Indus goblet with pointed base, elliptical footed goblet, flat dish with flaring sides (*thālī*), wide-mouthed large storage jar with concave profile above the base, jar with externally corrugated body and cup with perforated handle. The BARA ware is noticed here only on the surface and within the top layer. In the w. sector the Harappa deposit accounts for about 2 m of thickness, but the Harappa pottery is interlocked here with some quantity of the BARA ware from the bottom to the top of Pd I, suggesting that in Phase I the Harappans occupied the e. sector and subsequently in Phase 2 they spread also to the w. sector where the BARA people also joined them.

Fragmentary walls with brick of the standard Harappa size occur in both the sectors and at least four structural phases have been noticed in one trench. In the e. sector have been found four oval furnaces of small kilns in a row, intended perhaps to bake small objects. For constructing the furnace an oval pit with one end narrower than the other was first scooped out and its bottom and sides were then plastered with clay. Once the furnace was put to use, the heat burnt the clay plaster rendering it hard and vitreous in parts. The furnaces were full of burnt clods of clay from the sides and potsherds, and one of them has yielded three fragments of terracotta bangles. The furnaces are not uniform in size; one of the larger ones measures 1.93 m long, 1.32 m wide and

1.11 m deep. The furnaces almost peeped out of the present surface and were already damaged. It could not be ascertained if they had a permanent roof.

Among objects of general use recovered in the excavations are bangles of terracotta, faience, steatite, paste and bone; beads of faience, paste, shell and semiprecious stones; blades and a weight of chert; cakes; animal figurines and cart frames of terracotta [16.17]; and a ring, pins and antimony rods of copper [18.1]. Saddle querns and pestles of stone [6.19] are among the articles of household use.

Part of the e. sector had apparently been cut up by a monsoon channel, which was subsequently filled up by layers of clay and pebbles. Harappa pots and potsherds had also found their way into these deposits.

The evidence of Pd II is provided by a very thin but unmistakably identifiable deposit of Kushan pottery overlying the Harappa levels in the w. sector. No structures or other objects of this Pd have been noticed.

Pd III, medieval, is however substantial, with an average thickness of 2 m. The deposits are fairly rich in fragments of medieval glazed ware with white and blue hues and associated red and grey wares. Well-planned structures of *lakhauri* brick including a covered drain speak for the prosperity of the inhabitants in the late medieval period.

Kotla Nihang Khan was obviously only a village in Harappa times, but its archaeological importance cannot be underestimated, for it is the only site known so far on the Sutlej where mature Harappa pottery is prolific, with the BARA Ware accounting for not more than 5% of the total. Apparently it represents an earlier phase than that of the Harappa levels of ROPAR, where the characteristic shapes like the Indus goblet and flat *thālī* are very scarce and where the BARA ware vies with the Harappa.

Sharma, Y.D., 1976, in *Arch. Congress & Seminar, 1972*, Kurukshetra, pp. 5-15. Vats, M.S., 1940, *Excavations at Harappa*, Delhi, pp. 476-7.—Y.D. SHARMA

Kotli, Dt Rupnagar. The site, 12 km s.-w. of ROPAR, yielded Harappa Ware [11.3].

IAI 1953-4. Suraj Bhan, 1976, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 122.

Kotli-ki-Dhani (29°32'; 75°12'), Dt Hissar. RANG MAHAL [11.24] site.

IAI 1967-8.

Kotli-Mallian, Dt Amritsar. Black-slipped Ware [11.3] and black-and-red and grey wares.

IAI 1963-4.

Kotri, Dt Bhilwara. Black-and-red ware (of Banas [11.6.2] affiliation?).

IAI 1958-9.

Kotsan, Dt Ghazipur. Located on the n. bank of the river Akaunji the site yielded sherds of the fine grey ware, Black-slipped Ware [11.13] and associated red

wares.

IAR 1965-6.

Kottaimedu¹, Dt Madurai. Site with urn burials [4.17.9].

IAR 1958-9.

Kottaimedu², Dt S. Arcot. Red and grey wares of medium and thin fabric, occasionally with black slip, pieces of thick glazed ware and small rolled-out fragments similar to the Rouletted Ware [11.21] were found. The leg portion of a terracotta animal, three small round copper coins, a large number of iron nails and a long cylindrical shell bead were obtained.

IAR 1960-1.

Kottaimedu³, Dt Tiruchchirappalli. Urns, Megalithic Black-and-red ware [11.15.] and Russet-coated Painted Ware [11.22].

IAR 1963-4.

Kottaiappatti, Dt Madurai. Site with urn burials [4.17.9].

IAR 1960-1.

Kottalur, Dt Krishna. Sites with dolmens [4.17.7].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Kottampatti, Dt Tiruchchirappalli. Site with urn burials and cists [4.17.9].

IAR 1961-2.

Kottanallur, Dt Trichur. Megalithic [4.17.10] site.

IAR 1966-7.

Kottapalle¹, Dt Cuddapah. Early, Middle (Early [4.2], Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) tools were found.

IAR 1964-5.

Kottapalle², Dt Guntur. Site with Series II (Middle Palaeolithic [4.3]) tools.

IAR 1961-2.

Kottapalya, Dt Kolar. megalithic [4.17.8] site with stone circles and cists.

Information from C. Krishnamurthy through A. Sundara.

Kottuputtur, Dt Trichchirappalli. Megalithic [4.17.9] site with urn burials.

Gururaja Rao, B.K., ed., 1971, *Prof. Nilakanta Sastri Felicitation Volume*, Madras.

Kottur¹, Dt Chanda. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1961-2.

Kottur² Dt Dharmapuri. Megalithic [4.17.9] sites with port-holed cists.

IAR 1967-8.

Kottur³, Dt Kolar. Megalithic [4.17.8] site with cairn circles.

IAR 1970-1.

Kottur⁴, Dt N. Arcot. A Megalithic [4.17.9] habitation site at the foot of a hill.

IAR 1964-5.

Koturde (18°12'; 73°23'), Dt Kolaba. The site is situated 16 km north of MAHAD on the Gandhari Nadi. A few unifacial choppers [4.2], Middle Stone Age [4.3] artefacts and leaf-shaped points on carnelian were collected. A microlithic factory site was found near the road side

over 1 km from Koturde in the fields. A few cores, flakes and blades, mostly in carnelian, were obtained.

IAR 1969-70. Joshi, R.V., & Bopardikar, B.P., 1972, in *Arch. Congress & Seminar*, Nagpur, p. 49.

Kotwa, Dt Mirzapur. Kotwa, 16 km from Mirzapur, on the Mirzapur-Robertsganj road, yielded a core (on unspecified nature).

IAR 1956-7.

Kovalli, Dt Bijapur. An open-air Lower and Middle Palaeolithic [4.2, 3] factory site, also as a Late Stone Age (Mesolithic [4.5]) site.

IAR 1964-5. Pappu, R.S., 1974, *Pleistocene Studies in the Upper Krishna Basin*, Pune, p. 33.

Kowdalli, Dt Mysore. Megalithic cist burials [4.17.8].

IAR 1961-2.

Kowjageri, Dt Dharwar. Neolithic-Chalcolithic [4.6.9, 4.14.8] site yielding grey ware sherds of BRAHMAGIRI fabric, a few parallel-sided blades and microliths.

IAR 1966-7.

Kowlet, Dt Dharwar. Chalcolithic [4.14.8] remains.

IAR 1960-1.

Koyala, **Koyali**, Dt Mandsaur. About 10 km n.e. of Nahargarh two low mounds with painted pottery of the NAGDA fabric were noticed.

IAR 1959-60.

Kozhikode, Dt Kozhikode. Microlithic (of unspecified nature) habitation site.

Maloney, C., 1976, in Stein, B., ed., *Essays in s. India*, Delhi.

Krisalkalampatti, Dt Madurai. Microlithic (of unspecified nature) site. Urn burials [4.14.9] were also found.

IAR 1960-1.

Krishnagaon, Dt Nasik. Middle Palaeolithic [4.3] site.

IAR 1965-6.

Krishnamakonda-gavi, Dt Kurnool. Prehistoric caves. See BILLA SURGAM.

Krishnanagar, Dt Birbhum. Early Stone Age (Lower Palaeolithic [4.2]), Late Stone Age (Mesolithic [4.5]) and microlithic (of unspecified nature) site.

IAR 1962-3; 1964-5; 1965-6.

Kishnapur¹, Dt Ahmadnagar. Lower Palaeolithic [4.2] site.

IAR 1961-2.

Kishnapur², Dt Nalgonda. Megalithic [4.17.7] site.

IAR 1963-4.

Kishnapuram¹, Dt Chingleput. Early (Lower Palaeolithic [4.2]) and Late Stone Age (Mesolithic [4.5]) site.

IAR 1964-5.

Kishnapuram², Dt Kurnool. Site with Series I and II (Lower and Middle Palaeolithic [4.2, 3]) tools on the river Bhavanasi.

IAR 1959-60.

Kishnapuram³, Dt Tirunelveli. Megalithic [4.17.9] site.

ASI—AR 1902-3.

Krishni, Dt Saharanpur. Harappa Ware [11.3] and OCW [11.5].

IAR 1966-7.

Kubadthal, Dt Ahmadabad. Mesolithic [4.5] site.
IAR 1971-2.

Kuchai (21°59'; 86°42'), Dt Mayurbhanj, n. of the Dt town of Baripada along the national highway to Keonjhar and 5 to 6 km e. of the Burabalong river. Surface exploration of the site conducted during the 50s had pointed to its Neolithic [4.6.7] character, as evidenced by the find of typical ground stone implements like axes including a shouldered adze. In the field season of 1961-2 a systematic excavation was carried out at the site by the author on behalf of the ASI (*IAR 1961-2*, p. 35). The excavation, undertaken to a depth of 1.4 m where sub-soil water was encountered, revealed that the upper 40 to 45 cm of clayey deposit had Neolithic artefacts in association with a coarse grit-tempered red ware, sometimes also slipped and showing in addition incised or finger-tip decoration. The associated lithic industry consisted of ground stone axes of butt- or pointed-end variety, chisels, mace-heads, pounders and grinding stones. No structural remains were met with within the excavated area. From the lower deposit composed of lateritic gravel mixed with greyish earth were obtained microliths [4.5] of an essentially non-gemoetric industry represented by blades, points, lunates and various types of scrapers. No pottery was found in association with these implements.

An exact age as also the environmental conditions of the microlithic industry and the time-gap between it and the Neolithic still remains to be ascertained. For the former BIRBHANPUR in W. Bengal provides reasonable analogies. The Neolithic occupation could be assigned on the basis of comparative study to the last quarter of the 2nd millennium B.C.

The special significance of the site lies in the twofold sequence of the two cultures, viz. the Microlithic and the Neolithic, the occurrence of the former being identified for the first time in Orissa. In a like manner the association of pottery with Neolithic implements was recorded also for the first time, in the region.

—B.K. THAPAR

Kuchajharia, Dt Ranchi. Microlithic tools, both geometric and non-geometric, were collected. Though coarse grey and red wares were also found, their contemporaneity with the microliths is not certain.

IAR 1959-60.

Kuchukalpattu, Dt Dharmapuri. Cist burials [4.17.9].
IAR 1966-7.

Kuchval, Dt Bijapur. Series II tools (Middle Palaeolithic [4.3]) and microliths (of unspecified nature) were found.

IAR 1960-1.

Kudacha, Dt Dadra and Nagar Haveli. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3] and Neolithic [4.6] site on the Daman-Ganga.

IAR 1955-6.

Kudachi, Dt Belgaum. Ash-mound [14.3] and microliths (of unspecified nature).

IAR 1967-8. Sundara, A., 1971, in *Prof. Nilakanta Sastri Felicitation Vol.*, Madras.

Kudada. See DHALBHUM AREA.

Kudalasangama, Dt Bijapur. Late Stone Age (Mesolithic [4.5]) site yielding scrapers, awls and points.

IAR 1972-3.

Kudanur, Dt Kolar. Site with black-and-red (of unspecified nature) and red wares.

IAR 1972-3.

Kudapara, Dt Bankura. Site yielding blade industries (of unspecified nature).

IAR 1965-6.

Kudashi, Dt Dhule. Late Stone Age (Mesolithic [4.5] site.

IAR 1965-6.

Kudatini, Dt Bellary. Ash-mound [14.3] site. 4.6.9.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, Allchin, F.R., 1963, *Neolithic Cattle-keepers of s. India*, Cambridge, pp. 79-80.

Kudaveli, Dt Mahbubnagar. Middle Palaeolithic [4.3] site.

IAR 1966-7.

Kudeni, Dt Belgaum. Neolithic [4.6.9] Chalcolithic [4.14.8] site.

IAR 1965-6.

Kudholi, Dt Chanda. Lower Palaeolithic [4.2] site.

IAR 1960-1.

Kudiraimedu, Dt S. Arcot. Early historical [4.18.12] site.

IAR 1965-6.

Kudrihal, Dt Dharwar. Early historical [4.18.11] site. see HANDIGNUR.

IAR 1958-9.

Kudumiyampatti, Dt Dharmapuri. Megalithic sites with dolmens [4.17.9].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Kuduvalli. See SRISAILAM.

Kuharbena, Dt Palamau. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1971-2.

Kujad, Dt Ahmadabad. Mesolithic [4.5] site.

IAR 1971-2.

Kuju, Dt Singhbhum. Microlithic tools (of unspecified nature).

IAR 1959-60.

Kukarramath, Dt Mandla. Middle (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) tools.

IAR 1971-2.

Kukkudkhandi, Dt Ganjam. Microliths (of unspecified nature).

IAR 1963-4.

Kukud-Chimda, Dt Chanda. Megalithic stone circles [4.17.6].

IAR 1960-1.

Kukurhata, Dt Allahabad. Early historical [4.18.7] site.

IAR 1962-3.

Kukurmunda, Dt Dhule. Chalcolithic [4.14.8] site on the Tapti. See UDDHAMGADH.

IAR 1958-9.

Kulattur, Dt Tirunelveli. Mesolithic [4.5] *teri* [9.5] site. The tools comprise flakes and fragments, blades, scrapers, discoids, lunates, triangles and arrowheads of chert, quartz and rock-crystal. See SAWYERPURAM.

AI, 12, 1956, p. 12.

Kulei, Dt Dhenkanal. Series I (Lower Palaeolithic [4.2]) tools.

IAR 1957-8.

Kulgara, Kulghera, Dt Purulia. Copper Hoard [4.11] objects comprising three shouldered axes and an elongated pick-like object or ploughshare were found at the site situated close to the stream Patol, a tributary of the Kangsavati.

IAR 1971-2. Calcutta Review, Sept. 1971, p. 144.

Kulhade-ka-Johad, Dt Sikar. 58 copper celts (of a Copper Hoard [4.11]) from this site are in Neem-ka-thana sub-treasury. On the site there is a mound with OCV [11.5] and incised pottery similar to those from JODHPURA and a typical Harappa arrowhead [19.1.2].

Agrawala, R.C., 1978, in *Man & Environment*, 2, p. 123.

Kuli, Dt Dharwar. Early historical [4.18.11] site. See ANVERI.

IAR 1959-60.

Kuliana and adjacent sites, Dt Mayurbhanj. The Palaeolithic site of Kuliana ($22^{\circ}4'$; $86^{\circ}39'$), was discovered in 1939 by E.C. Worman (Jr), of the Harvard Univ. The work of exploration and excavation was carried out by the Dept of Anthropology, Calcutta Univ. in 1939-40 and 1941-2, followed by further six explorations spread over a number of years. All this resulted in extending the Palaeolithic site to many neighbouring villages within a radius of about 5 km as well as further afield to BANGRIPOSI ($22^{\circ}6'$; $86^{\circ}32'$). At Kuliana stone tools made of quartzite were first found exposed in an excavated pond and *in situ* in sections of secondary laterite [9.6] which is a widespread deposit here as elsewhere in Orissa. Kuliana stands almost in the centre of the elevated lateritic peneplain that stretches from Baripada to Bangriposi on the left flank of the Burhabalang river. The other adjacent sites are: KALABARIA ($22^{\circ}5'$; $86^{\circ}38'$); KOLISUTA ($22^{\circ}4'$; $86^{\circ}40'$), NUABERI ($22^{\circ}3'$; $86^{\circ}40'$); PRATAPPUR ($22^{\circ}4'$; $86^{\circ}38'$); KENDU-DIHA ($22^{\circ}5'$; $86^{\circ}39'$); SANDIM ($22^{\circ}5'$; $86^{\circ}38'$); BRAH-MANGAON ($22^{\circ}5'$; $86^{\circ}38'$); BURAMARA ($22^{\circ}6'$; $86^{\circ}39'$); PATINJA ($22^{\circ}3'$; $86^{\circ}37'$); MUNDABANI ($22^{\circ}2'$; $86^{\circ}35'$); BHUASONI ($22^{\circ}2'$; $86^{\circ}32'$); PARIKOLI and KAMATA (same co-ordinates as Kuliana). Apart from this tools

have been found in the gravel sections exposed on the Burhabalang near KAMARPAL, 3 km s.-w. of Kuliana. Sections exposed in ponds and quarries at Kuliana reveal implements embedded in secondary laterite (pisolitic) of variable thicknesses underlain by more compact primary laterite and overlain by thin deposits of clay. Excavation was first undertaken at Kuliana on the lateritic banks of two ponds designated A and B, which had previously exposed implements in course of digging by the Public Works Department. Four trenches were laid, two in each pond in the form of a series of broad steps. Implementiferous laterite was encountered below a thin overburden of yellowish soil, about 60 cm thick. The thickness of the pisolitic laterite varies between 1.20 and 1.8 m and implements have been found at different levels down to 1.40 m from the ground surface. The tools include different types of handaxes, cleavers, choppers and scrapers, associated with plain flakes. The more compact laterite did not yield any tools.

An abundance of Palaeolithic tools has been recovered at KAMATA from an extensive laterite quarry, where two excavated trenches have revealed a variable thickness of tool-bearing laterite, here underlain by a bed of boulder conglomerate in ferruginous matrix. The excavation has brought to light in the laterite a large number of tools like those of Kuliana at different levels, particularly between 66 and 81 cm below ground level in the second trench. Taken as a whole the tool industries from Kuliana and KAMATA lateritic sites are typologically described as Lower Palaeolithic [4.2], consisting of various types of handaxes, cleavers, choppers and scrapers, associated with plain flakes.

In KALABARIA a rich assemblage of the same tool types has been found in a similar geological context in pit and quarry sections and by test digging. Most of the tools including fine bifaces occur between 60 and 79 cm and a few between 91 cm and 1.5 m in the secondary laterite of variable thickness underlain by primary laterite. At NUABERI a quarry section has revealed a thin deposit, 60 cm thick, of tool-bearing secondary laterite underlain by primary laterite. The tools are of the same types as at Kuliana. At the other sites mentioned above the same tool industries have been found in open pits and quarries in variable deposits of secondary laterite. Away at BANGRIPOSI the laterite reappears with the recurrence of the same tool types in pits and quarries. Tools occur *in situ* between 79 and 89 cm below ground level.

The tool-bearing zone of the secondary laterite has been found to vary in thickness between 60 cm and 1.5 m. It has been observed that relatively the earliest tools appear to be crude pebble choppers and scrapers, followed by pebble-butted handaxes of asymmetric form and crude workmanship. After this appear neatly worked handaxes and cleavers along with choppers with

improved technique. Plain flakes are found at almost all the levels.

The tool industries of Kuliana and its neighbouring sites can be regarded as belonging to the Lower Palaeolithic tool tradition of peninsular India. Typologically they range from the Abbevillian to the Middle and Late Acheulian. The handaxe which is the dominant type is represented by a variety of forms and techniques, mens with straight or oblique cutting edge. A few specimens among others peariforms, almonds, ovates, ovals or ovaloids and poniard forms. Among the cleavers made on core and on flake, there are U- and V-shaped specimens with straight or oblique cutting-edge. A few specimens show the characteristic Vaal technique. Choppers and scrapers range from crude to finer types. The associated flakes are mostly plain and a very few approach the Levalloisean [16.15.1].

As stated above Lower Palaeolithic tools like those of Kuliana have been found in stratigraphic sections exposed on the Burhabalang. The tool-bearing boulder conglomerate overlies a bed of greyish-blue clay and underlies a thick deposit of alluvium. The tools from the lower part of this bed are described as an early phase of the Abbevillian-Acheulian and those from the less consolidated upper part of the same bed as a later phase of the Acheulian. Typologically the secondary laterite and boulder conglomerate are broadly contemporary.

On the basis of the palaeontological data, Lower Pleistocene [9.8.2] in character, obtained in stratigraphic contexts of the so-called Baripada beds at Mahulia and Mukramatia, the implementiferous secondary laterite may be tentatively dated to the Middle Pleistocene [9.8.2]. The tool industries of Kuliana and adjacent sites are accordingly geologically datable to the Middle Pleistocene.

A few flake tools along with core tools have been found below a deposit of brownish clay which overlies detrital laterite at places on higher ground near Kuliana. A few flake-blade tools have also been found in the brownish clay. These two small series of tools have been described as comparable to the flake and flake-blade tools of DHALBHUM (Singhbhum).

Bose, N.K., & Sen, D., 1948, *Excavations in Mayurbhanj*, Calcutta. Bose, N.K., Sen, D., & Roy, G.S., 1951, in *Geographical Review of India*, 13, 1, pp. 1-8; 1958, in *Man in India*, 38, 1, pp. 49-55. Chowdhuri, A., 1957, in *Proc. Indian Science Congress*, 4 (for Pleistocene pluvial cycle). Ghosh, A.K., 1970, in *Jour. Indian Anthropological Soc.*, 5, 1 & 1, pp. 233-48. Ghosh, A.K., & Basu, A.N., 1969, in *Science & Culture*, 35, 9, pp. 476-9. Mohapatra, G.C., 1962, *Stone Age Cultures of Orissa*, Poona. Sarma, K.C., 1956, in *Quarterly Jour. Geological Mining & Metallurgical Soc. India*, 28, 4 (for palaeontology of Baripada beds); 1957, in *ibid.*, 29, 2.—D. SEN
Kullabad (29°27'; 74°51'), Dt Hissar. RANG MAHAL [11.24] site.

IAR 1967-8.

Kullakkapalayam, Dt Coimbatore. Megalithic port-

holed cists [4.17.9].

IAR 1962-3.

Kullalli, Dt Bijapur. Chalcolithic [4.14.8] site with rock bruising on a hillock called Gombigudda.

Progress Rep. Kannada Res. Inst., 1939-40, p. 21. P.B. Desai *Felicitatation Vol.*, Dharwar, 1971, pp. 4-30.

Kulloli, Dt Bijapur. Ash-mound [14.3].

Sundara, A., 1971, in *Prof. Nilakanta Sastri Felicitation Vol.*, Madras.

Kulon, Dt Jabalpur. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1960-1.

Kultana, Dt Rohtak. Site with grey ware and early historical [4.18.1] material.

Jour. Haryana Studies, 3, p. 5.

Kuluvaya, Dt Nellore. Lower [4.2] and Middle Palaeolithic [4.3] site in the Pennar river valley.

IAR 1965-6.

Kumaragunta. See BOGGERU VALLEY.

Kumaramangalam, Dt S. Arcot. Megalithic [4.17.9] site with pyriform urns and Megalithic pottery [11.5].

IAR 1955-6.

Kumaramputhur, Dt Palghat. Megalithic [4.17.10] burial jars.

IAR 1962-3.

Kumaria, Dt Bhilwara. Black-and-red ware and microliths (of unspecified nature). See DURIA.

IAR 1957-8.

Kumari valley, Dt Bankura. Quartzite pebble tools [4.2.4].

IAR 1961-2; 1962-3.

Kumbalappadi, Dt Dharmapuri. Megalithic burial sites [4.17.9].

IAR 1969-70.

Kumbharpada, Dt Dhule. Lower Palaeolithic [4.2] tools and microliths (the latter of unspecified nature).

IAR 1958-9; 1959-60.

Kumda, Dt Bolangir. Microliths (of unspecified nature).

IAR 1963-4.

Kumili, Ottivakkam, Dt Chingleput. Megalithic [4.17.9] site.

AI, 22, 1966, p. 30.

Kummur, Dt Dharwar. Early historical [4.18.11] site. See HANDIGNUR.

IAR 1958-9.

Kumrahar. See PĀṬALIPUTRA.

Kumshi, Dt Bijapur. Chalcolithic [4.14.8] habitation site. See BAGLUR.

IAR 1959-60; 1960-1.

Kunber, Dt Dharwar. Chalcolithic [4.14.8] site. (Same as following?).

IAR 1959-60.

Kunbev, Dt Dharwar. Neolithic [4.6.9]-Chalcolithic [4.14.8] site. (Same as preceding?).

IAR 1962-3.

Kunchri, Dt Junagadh. Site with Red Polished Ware [11.24].

IAR 1957-8.

Kunda, Dt Meerut. Historical mound (of unspecified nature).

IAR 1970-1.

Kunda Himaya. See CHANDRAPRABHA VALLEY.

Kundalanaickenpatti, Dt Madurai. Megalithic [4.17.9] site with about a dozen stone circles.

IAR 1956-7.

Kundalasangama, Dt Bijapur. (?) Mesolithic [4.5] site yielding scrapers, awls and points.

IAR 1972-3.

Kundala valley, Dt E. Nimar. Lower and Upper Palaeolithic [4.2, 4] tools were found.

IAR 1959-60.

Kundam, Dt Jabalpur. Series I and Series II (Lower and Middle Palaeolithic [4.2, 3] tools.

IAR 1958-9.

Kundanpur (22°5'; 71°10'), Dt Rajkot. Late Harappa [4.10] site corresponding to RANGPUR II B and II C.

AI, 18 & 19, 1962 & 1963, p. 206.

Kundargi, Dt Belgaum. Megalithic [4.17.8] site with menhirs. (Same as following?).

Progress Rep. Kannada Res. Inst., 1947-52, p. 14.

Kundargi, (16°05'; 74°48'), Dt Belgaum. Middle Palaeolithic [4.3] site. See GHATAPRABHA VALLEY. (Same as preceding?).

Kundari, Dt Allahabad. Megalithic [4.17.3] site.

IAR 1963-4.

Kundarkocha. See DHALBHUM AREA.

Kundidih, Dt Allahabad. Late Stone Age (Mesolithic [4.5]) site.

IAR 1963-4.

Kundinpur. See KAUNDINYAPURA.

Kundni, Dt Rajkot. Harappa [4.9] site.

IAR 1957-8.

Kundrasanahalli, Dt Kolar. Megalithic stone circles [4.17.8].

IAR 1970-1.

Kundukottai, Dt Dharmapuri. Megalithic sites with dolmenoid cists and circle stones [4.17.9].

IAR 1967-8.

Kunduripi, Dt Anantapur. Neolithic [4.6.8] habitation site also with early historical [4.18.10] pottery. See AKKAMMAKONDA.

IAR 1965-6.

Kunjaram, Dt Chingleput. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3]) tools. See CUNJALLUM.

IAR 1963-4.

Kunjla, Dt Ranchi. Asura site [14.4] 4 km s.-s.-w of Khunti. The mound is covered with brick and pottery. Excavation exposed ruins of a brick house, almost complete on plain, measuring 19 × 6 m. The antiquities discovered in the excavation included a good number of iron objects. The pottery is coarse in fabric, thick in section and made of badly levigated clay with small bits

of quartz.

Roy, S.C., 1915, in *Jour. Bihar & Orissa Res. Soc.*, 1, p. 237. Excavated by A. Ghosh (not published).

Kunkune, Dt Purulia. A handaxe of green micaceous quartzite was found in 1865 near Gobindapur.

Logan, A.C., 1906, *Old Chipped Stone of India*, London pp. 30-3. Brown, C.J., 1917, *Catalogue of Prehistoric Antiquities in the Indian Museum at Calcutta*, Simla, p. 67.

Kunnattur, Dt Chingleput, excavated by B. Saran of the ASI during 1955-7 (IAR 1955-6, p. 23; 1956-7, p. 31) to lay bare the Megalithic remains [4.17.9] and to correlate them with a habitation site. Three main types of Megalithic burials were exposed along with the remains of the early historical [4.18.12] and late historical [4.19.10] periods. The megalithic types were the cairn circle, state dolmenoid cist and sarcophagi [12.9], besides a few pyriform urns. From these megaliths were obtained sherds of the Black-and-red Ware [11.15.3] and red and black wares.

Of the cairn circles, Megaliths 1, 4 and 5, Megalith 1 was devoid of any skeletal remains, though it had grave goods such as 26 pots and seven iron implements. But the pit was not oriented in the usual e.-w. direction.

Megalithic 4, a pit circle measuring 9.75 × 5.18 m in diameter, contained a double line of circle stones while down the slope a large number of granite boulders were used as circle stones, the smaller ones being on the slope of Megalith 5, a huge cairn circle located on a steep slope with an outer diameter of 10.66 m. It appears that from the discovery of a fragmentary pot overlying the cairn stones in the n.-e. portion of the area that some funeral rites had been performed. This pot contained only a few pieces of human bones.

Megalith 2, a slate dolmenoid cist enclosed by a stone circle extensively damaged but marked by a port-hole in the w., contained a fragmentary sword of iron, a terracotta whorl bead and a copper bell.

Megaliths 3 and 7 each had a legged terracotta sarcophagus covered by a capstone flush with the cairn packing. The former was laid into a pit along with a few pieces of pottery and was encircled by boulders in a smaller area without any e.-w. orientation. The grave goods consisted of two coiled bracelets of iron and a very few skeletal remains such as fragments of a bone (radius) and desiduous tooth, probably of a youth. On the outer side of the sarcophagus 13 pots were found. Megalith 7 had a four-legged sarcophagus oriented n.-w. to s.-e. The capstone was without circle stones and rested on boulders 20 cm above the old surface. The sarcophagus, 54 × 34 × 49 cm, had holes at the bottom. With the exception of four small cups of Black-and-red Ware it did not reveal any object. Various shapes in pottery were found between the lid and the capstone. They included the dish, bowl, lid and ring-stand, besides a few pots.

Megalith 6 was badly damaged and revealed only some damaged pyriform urns in a line.

The habitation area, dug down to the level of the bed rock, had two occupational deposits, Pds I and II. The total depth of Pd I was about 2.45 m, divided into two Sub-pds, A and B. The structures consisted of a wall of brick measuring 25 × 18 × 51 cm and a drain made of pottery pipes fitted into one another. In Sub-pd B traces of damaged walls of rubble stone, measuring 2.56 and 2.60 m in length, were found. A sturdy ware with a bright-red slip; was the principal ceramic type, identical with the early historical levels of BRAHMAGIRI and CHANDRAVALLI. While the Black-and-red Ware was also found though in a limited quantity, the Russet-coated Painted Ware [11.22] was absent. Most of the pottery was wheel-made excepting the large jars. The shapes of pottery in the lower level of Pd I A comprised straight or slightly incurved shallow dishes. The other important types include a lid with flanged waist, the conical bowl, carinated cooking vessel with or without flange, rounded basin having an everted rim, pot with a grooved rim, shouldered jar with flat and thick rim and a basin. Inside the basin appeared some deep notches, probably for peeling vegetables.

Apart from pottery a few fragmentary portable ovens made of clay were unearthed from different levels. These were handmade and shaped like a horseshoe bearing finger-tip designs.

Beads of quartz, glass and coral in varied shapes and colours, glass bangles, terracotta figurines and a seal with the depiction of an animal, a gold pin and three damaged copper coins were the other small finds.

The 15 cm deep deposit of Pd II was marked by the presence of porcelain and coarse red and black wares. Finds were limited due to the disturbance of the layers caused by huge pits. The Pd may be datable to the time of Sekkizhar Peruman the Śaiva saint and the composer of the *Peria Purāṇam* who lived at Kunnattur in the 12th century.

—A. BANERJI

Kunnavakkam, Dt Chingleput. Megalithic [4.17.9] site.
IAR 1967-8.

Kunsela, Dt Banas-Kantha. Painted red and medieval glazed ware.
IAR 1964-5.

Kuntabir, Dt Mirzapur. Middle Stone Age (Middle Palaeolithic [4.3]), Upper Palaeolithic [4.4], Late Stone Age (Mesolithic [4.5]) and Megalithic [4.17.3] site.
IAR 1969-70.

Kuntogi, Dt Bijapur. Microliths (of unspecified nature) and early historical [4.18.11] remains.
IAR 1961-2.

Kuntoji¹, Dt Dharwar. Historical site (of unspecified nature).
IAR 1964-5.

Kuntoji², Dt Raichur. Neolithic [4.6.9] site. (Same as following?).

IAR 1970-1.

Kuntoji³, Dt Raichur. Chalcolithic [4.14.8] site. (Same as preceding?).

Karnataka Bharati, 6, 1, pp. 64-75.

Kunwari, Dt Hissar. Site with grey ware and early historical [4.18.1] material.

Silak Ram, 1972, unpublished thesis, Kurukshetra Univ.

Kupar Lahr, Dt Kangra. Early, Middle (Lower and Middle Palaeolithic [4.2, 3]) site.

IAR 1966-7.

Kupgal, **Kuppugallu**, Dt Bellary, the hill also known as Peacock hill, located 5.4 km n.e. of Bellary, first noticed by Fraser. In 1903 Foote found that the castellated hills contained rock-shelters and vestiges of Neolithic habitation [4.6.9] (Foote, 1914), the flat portions in the hills bounded by retaining walls of rubble stone masonry to prevent erosion and made habitable. Although in the higher reaches Neolithic implements were few in the lower portions they were found in abundance. Foote also located a factory site yielding neoliths at all stages of manufacture. The tools included axes, adzes, chisels, hammers, pounders, flakes scrapers, etc. Besides these he found a microlithic industry comprising flakes, cores, scrapers, etc., on siliceous material. On the n. face of the hill rock bruising representing human and animal figures, either singly or in groups, hunting scenes, men armed with shields and spears, birds, etc., were observed. Notable among the animals are the bull and elephant. Some of the bruising are of the Neolithic period.

To the n.e. of the hill Foote noticed two ash-mounds [14.3], which had already been reported by Newbold in 1838. Roughly square, they measured 18 × 18 m and 15 × 15 m rising to an approximate height of 4.8 m and 3 m above the surrounding ground level when seen by Foote. Foote collected ash, Neolithic implements and pottery from them. The ash specimen contained unmistakable traces of animal fodder, viz. straw.

Subsequent excavations in 1960s confirmed Foote's observation that the ash-mounds were of Neolithic times. On the slightly brownish disintegrated Bellary gneiss were found in the reddish-brown gravelly detritus soil heavily patinated basaltic and quartz flakes. These pre-Neolithic flakes got embedded due to colluvial process when the climate was semi-arid with occasional torrential downpours. Overlying this detritus soil was a reddish-brown humus-rich soil formed due to a lesser erosional process and consequent thick vegetation. Above this humus developed the Neolithic deposit.

The Neolithic accumulations, nearly 7.75 m thick, in the subsequent congenial semi-arid climate consisted of two floors, 1.25 and 2.40 m, two scoriaceous ash

deposits 1-35 and 2-25 m, with vitrified posherds and animal bones and a whitish-grey ash deposit, 15 cm thick sealed by light-brownish soil, 35 cm thick. The two floors, the earlier one of light-brown grey banded ash and the later pinkish-grey ash, were separated by the earliest 1-35 m thick scoriaceous layer: the next floor was sealed by the second scoriaceous stratum. The scoriaceous deposits are due to periodical burning, intentional or otherwise of accumulated cattle dung. The absence of slag [16.9.4], metal or crucible [16.4] eliminates the possibility of their being the result of any industrial activity.

Foot, R.B., 1914, *Indian Prehistoric & Protohistoric Antiquities*, Madras, pp. 42-56. Mujumdar, G.G., & Rajaguru, S.N., 1966, *Ash Mound Excavations at Kuppallu*, Pune.—K.S. RAMACHANDRAN.

Kupi, Dt Gulbarga. Ash-mound [14.3].

Jour. Geological Survey of Hyderabad, 4, 1, p. 157. Paddayya, K., 1973, *Investigations into the Neolithic Cultures of the Shorapur Doab*, s. India, Leiden, p. 9.

Kuppagallu, Dt Kurnool. Neolithic [4.6.9] celts, a few pieces of Megalithic Black-and-red [11.15.3] and black polished ware.

IAR 1958-9.

Kuppelur, Dt Dharwar. Early historical [4.18.11] site. See ANVERI.

IAR 1959-60.

Kuppugallu. See KUPGALLU.

Kurah, Dt Chanda. Lower Palaeolithic [4.2] site.

IAR 1959-60.

Kurain, Dt Kanpur. Site with NBPW [11.16], Black-slipped Ware [11.13] and medieval ware.

IAR 1969-70; 1970-1.

Kuraiyur, Dt Madurai. Urn burials [4.17.9].

IAR 1960-1.

Kurali, Dt Saharanpur. PGW [11.14] site.

IAR 1967-8.

Kurathinosur, Dt Mysore. Megalithic cist burials [4.17.8].

IAR 1961-2.

Kuravilangad, Dt Kottayam. Dolmens [4.17.10].

IAR 1963-4.

Kurda, Dt Rupnagar. Late Harappa [4.10] site.

Suraj Bhan, 1976, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 123.

Kurdi, Dt Rupnagar. Late Harappa [4.10] site.

Suraj Bhan, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 123.

Kurel, Dt Valsad. Middle Stone Age (Middle Palaeolithic [4.3]) site in the Purna valley.

IAR 1968-9.

Kurgovinkop, Dt Dharwar. Neolithic [4.6.9] and Megalithic [4.17.8] site.

IAR 1968-9.

Kurha, Dt Allahabad. Late Stone Age (Mesolithic [4.5]) site on the old terrace of the Ganga known as Bhagar with burials and hearths. See BICHIA, GANGA VALLEY.

IAR 1971-2. Sharma, G.R., 1975, Presidential Address to the Indian Prehistoric Society, Delhi.

Kurhadi, Dt Sundargarh. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1957-8.

Kuri, Dt Meerut. PGW [11.14] and NBPW [11.16] site on the left bank of the Yamuna.

IAR 1968-9. Sharma, R.P., 1976, in *Arch. Congress & Seminar*, 1972, Kurukshetra.

Kuriar, Dt Bhilwara. Microliths (evidently of Chalcolithic [4.14.1] assemblage) made of chert, jasper, chalcedony, and agate and comprising blades, points, side and end scrapers, fluted cores and crested-ridge flakes.

IAR 1957-8.

Kurichedu¹, Dt Guntur. Palaeoliths (of unspecified nature).

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Kurichedu², Dt Nellore. Neolithic [4.6.8] site and a habitation site of the early historical period [4.8.10] characterized by the Red Polished Ware [11.23].

IAR 1959-60.

Kuri-Kamalpur, Dt Meerut. Red ware of Sunga-Kushan assemblage and medieval ware.

IAR 1962-3.

Kurikoppa, Dt Bellary. Lower Palaeolithic [4.2] site. (Same as following?).

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Kurikoppa hill, Dt Bellary. Palaeolithic of (unspecified nature) and Neolithic [4.6.9] site, also with ash-mound [14.3] (Same as preceding?).

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, pp. 77-8, 94.

Kurivalamvandanallur Karisattan, Dt Tirunelveli. Prehistoric site (of unspecified nature).

Cammiade, L.A., *Gazetteer of Tinnevely Dt*, p. 409. ASI—AR 1936-7.

Kuriyakunj, Dt Banda. Painted rock-shelter [13].

Misra, V.D., 1971, *Some Aspects of Indian Arch*, Allahabad, p. 54.

Kurkundi, Dt Raichur. Prehistoric site (of unspecified nature).

AR Hyderabad Arch. Dept 1936-7, p. 2. Allchin, F.R., 1963, *Neolithic Cattle-keepers of s. India*, p. 61.

Kurkutia, Dt Bankura. Neolithic [4.6.5] and microlithic (of unspecified nature) site.

IAR 1959-60.

Kurmahat, Dt Bhagalpur. Site with microliths (of unspecified nature).

IAR 1963-4.

Kurmitha, Dt Birbhum. Site with black-and-red ware (of unspecified nature).

IAR 1967-8.

Kurnool, Dt Kurnool. Megalithic [4.17.8] site on the n. bank of the Tungabhadra behind the medieval fortress opposite the town of Kurnool. The site is on the mound, now a ploughed field, with a scatter of pottery and neoliths [4.6.9] all round. Near the site were obtained from the high grounds a large number of jasper tools of

Series II (Middle Palaeolithic [4.3]).

IAR 1959-60.

Kuroli, Dt Nagaur. Late Stone Age (Mesolithic [4.5]) site.

IAR 1965-6.

Kurrara-Kurrari, Dt Rupnagar. Harappa [4.6] and late Harappa [4.10] site.

IAR 1962-3; 1964-5.

Kurro, Dt Kathua. Terrace 2 of the Ravi yielded pre-Sohan [4.2] type of huge flakes, rolled and heavily patinated Early Sohan unifacial pebble choppers and Clactonian and Levalloisian flakes.

IAR 1965-6.

Kurthala, Dt Gurgaon. PGW [11.14] site.

Suraj Bhan, 1976, *Excavations at Mitthal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 126.

KurubanaHalli, Dt Dharmapuri. Megalithic [4.17.9] sites with cairn-packed cists and stone circles.

IAR 1967-8.

Kurukshetra (29°58'; 76°50'), headquarters of the Dt of the same name, the traditional site of the *Mahābhārata* war, s. of the SARASVATĪ, modern Sarsuti, and n. of the DRṢADVATĪ (*Mahābhārata*, 3.81.175), which formed the holy land of Brahmāvarta (*Manu-smṛti*, 2.17), though ancient Kurukshetra itself was a part of e. of Brahmarsideśa, e. of Brahmāvarta, (*ibid.*, 2.19). The area, rich in varied archaeological remains; was first explored in the later half of the 19th century by A. Cunningham who identified the ancient mounds at Thanesar with spots visited by Hieun Tsang in the 7th century (*ASI-AR*, 2, p. 21; 14, p. 8). D.B. Spooner excavated at Raja Karna ka Qila, another mound near Thanesar, in 1921-3 (*ASI-AR* 1921-2, 1922-3). During the same years he also explored AMIN. THEH POLAR, a mound on the Sarasvatī, was excavated in 1933-4 and in 1937-8. (*ibid.*, 1933-4, 1937-8). In the early fifties B.B. Lal picked up PGW sherds [11.14] from PEHOWA (ancient Prthūdaka), RAJA KARNA KA QILA, AMIN, etc, in the region (*AI*, 10 and 11, 1954 and 5, p. 138-46). A systematic investigation of the Kurukshetra region was started by the author in 1960-1, when he brought to light a number of late Siswal, late Harappa [11.4] and PGW sites in the region. A more intensive investigation of the region was carried out by the author jointly with Jim G. Shaffer during 1977 (Suraj Bhan and Shaffer, 1977) and by M.R. Sharma. As a result of these investigations it is now known that the antiquity of the Kurukshetra region goes back to pre-Harappa times. This is indicated by the discovery of early SISWAL (SOTHI/KALIBANGAN I) ware [11.2] in course of surface explorations from BALU, Hatho and JIND (Bir Bara Ban) in the adjoining Jind Dt (headquarters Jind; 29°19'; 76°32'). The pottery comprise all the six fabrics of Kalibangan I, though the bichrome painted pottery of Fabric A is rare.

The discovery of Harappa ware [11.3], beads of

semiprecious stones, faience bangles and terracotta toy-cart frames and wheels [15.19], beads, triangular cakes [6.27] and circular discs from BALU clearly indicates the extension of the mature Harappa culture [4.9] in the region. BALU is a sizeable mound, 265 m long and 290 m wide, rising to a height of 3-6 m. Besides Balu, perhaps a town site, a number of smaller sites yielding the Harappa Ware seemingly represent village settlements of the culture.

Late Harappa [4.10] sites are the most numerous. A number of them continued to be occupied during the succeeding PGW [4.15] and later periods. A few of them, as BUDHANPUR and THIRANA in Dt Karnal and SAPALI KHERI and ALIPURA in Dts Kurukshetra and Jind respectively, have an area of more than 50000 sq m. It is significant that at the late Harappa mound of AUGAND in Dt Karnal can be noticed the traces of a large mud brick platform, characteristic of the classical Harappa town sites. A potsherd with the Harappa script [20.4.1] and an obsidian flake have also been picked up from the site.

PGW settlements are the secondmost frequent. Most of them continued to be occupied in historical times. It is significant that several of them have sizeable dimensions, between 40000 to 70000 sq m, perhaps suggesting their urban status.

The Dt headquarters at Kurukshetra are studded with a cluster of ancient mound. The most impressive of these are the extensive ruins on the w. of Thanesar (29°58'; 76°56') which are capped by a late medieval tomb associated with Sheikh Chilli. This may have been the fort of Harṣavardhana (606-48) whose earlier capital was Sthāṇiśara (Thaneswar). The site has yielded early historical and medieval pottery. Further w. of the fort mound near Barhi village lies a small mound locally called PANDITON KA TILA, described as Madarsa Tila by Cunningham. From the site have been picked up late Harappa, PGW and early historical pottery. From the ruins of DUDAKHERI to the e. of Thanesar town have been discovered late Harappa pottery and PGW while remains of a Gurjara-Pratihāra temple complex have been identified at Sakhaji ka Tila.

The twin mounds to the w. of the Kurukshetra Univ. campus, called RAJA KARNA KA QILA and MIRZAPUR sites, were excavated by the Dept of Arch. of the Kurukshetra Univ. from 1970-1 to 1975-6 (*IAR* 1970-1, p. 15; 1971-2, p. 23; 1972-3, p. 12). The MIRZAPUR mound has yielded a settlement of the late Harappa period, an early historical shrine and a late medieval graveyard. At the larger mound of RAJA KARNA KA QILA were recovered habitation remains belonging to the NBPW [11.16] and early historical times and a late medieval fortress made of *lakhauri* bricks. As such the combined sequence of cultures at the twin mounds may be divided into four

Pds : Pd I (late Harappa), Mirzapur I; Pd II (NBPW), Raja Karna ka Tila I; Pd III (early historical Yaudheya-Kushan), Raja Karna ka Tila II and Mirzapur II; and Pd IV (late medieval), Raja Karna ka Tila III and Mirzapur III.

The late Harappa deposits of MIRZAPUR I have yielded mud brick structures, fire pits and corn bins in rooms and the typical black-painted red pottery of MITATHAL II B and BARA affiliations. The other finds include : a variety of beads of agate, crystal, carnelian, jasper, steatite, faience and terracotta; chisels; rings; needles; a leaf-shaped spearhead and a sickle in copper; figurines of the humped bull and painted figurines of the snake; triangular cakes [6.27]; circular discs, bangles and toy carts in clay; querns and pestles [6.19] in stone; and bangles, decorated balls and a beautiful stag figurine for use as pendant in faience. The period may be dated between c. 1700 and 1300 B.C.

(See DRŚADVATI VALLEY and SARASVATI VALLEY).

Suraj Bhan, 1975, *Excavation of Mitathal and Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra; 1973, *Prehistoric Arch. of the Sarasvati and Drishadvati valleys (Haryana)*, Ph.D. dissertation, M.S. Univ., Baroda (unpublished). Suraj Bhan & Shaffer, J.G., 1978, in *Man & Environment*, 2.—SURAJ BHAN

Kurul, Dt Chanda. The site on the Saltti Nullah yielded leaf-shaped points, fluted cores and blades (perhaps of Chalcolithic [4.14.6] assemblage).

IAR 1968-9.

Kurumankottai, Dt S. Arcot. Megalithic [11.17.9] site.

AI, 22, 1966, p. 32.

Kurumbur-kottaimedu, Dt S. Arcot. Early historical [4.18.12] site, probably of Pāṇḍyan times.

IAR 1958-9.

Kurumbur, Dt Tirunelveli. Megalithic [4.17.9] site.

ASI—AR 1902-3.

Kurumgarh, Dt Ranchi. Tools of the Early, Middle (Lower, Middle Palaeolithic [4.2, 3]) and Late Stone (Mesolithic [4.5]) Ages.

IAR 1965-6.

Kurund, Dt Ahmadnagar. Tools of Series II (Middle Palaeolithic [4.3]), microliths (of unspecified nature) and sherds of thick grey ware.

IAR 1960-1.

Kurura, Dt Burdwan. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1963-4.

Kuruvikondanpatti, Dt Pudukkottai. Microlithic (of unspecified nature) site.

IAR 1961-2.

Kuruvikulam, Dt Tirunelveli. Prehistoric (of unspecified nature) site.

Cammiade, L.A., *Gazetteer of Dt Tinnevely*, p. 409. ASI—AR 1936-7.

Kusaha-Kusi, Dt Mirzapur. Black-and-red ware and NBPW [11.16].

IAR 1962-3.

Kushana, Dt Bharatpur. PGW [11.16] and red ware.

IAR 1965-6.

Kushaya, Dt Monghyr. Shouldered celt of copper [4.11].

Ind. Hist. Quarterly, 11, 1935, p. 517.

Kushur, Dt Dharwar. Stone circles [4.17.8] with the typical Black-and-red Ware [11.15.3] (Same as KUSKUR?).

IAR 1959-60.

Kuśinagara, Kasia (26°44'; 83°55'), Dt Deoria, the capital of the Malla tribe, in the suburb (*upavartana*) of which Buddha passed away and his corporeal remains were cremated. Though the town site has not been identified, the site of Buddha's death was one of the four principal centres of Buddhist pilgrimage. The Buddhist establishment, known as Mahāparinirvāṇa-vihāra, was clustered around the main Nirvāṇa *stūpa*, the nucleus of which could go back to Aśoka, fronted by a temple with a large figure of reclining (dying) Buddha, the figure of a devotee bearing an inscription in Gupta characters (Fleet, 1888, p. 272). The *stūpa* and the temple were cleared by A.C.L. Carleyle in the eighties of the last century (ASI—AR, 18, 1883, p. 55; 22, 1885, p. 16). Excavation was resumed in 1904-5 by the ASI (ASI—AR, 1904-5, p. 43; 1905-6, p. 61; 1906-7, p. 43; 1910-1, p. 63; 1911-12, p. 134), when a shaft was driven through the centre of the *stūpa* which brought to light a copper-plate placed on the mouth of a relic casket [12.8] in the form of a copper vessel with charcoal, cowries, precious stones and a gold coin of Kumāragupta I. The copper-plate was engraved with the *Pratīya-samutpāda-sūtra* and ended by saying that it had been placed by a devotee in the *nirvāṇa-caitya*.

The area is studded with remains, of which eight monasteries with the usual plans have been excavated, but nothing earlier than Kushan coins has been found. The establishment continued to be in occupation till the 10th-11th century. A chapel not far away, forming part of a monastery, has an image of Buddha with the inscription of a local Kalacuri chief. Over 1 km to the e. is a huge *stūpa*, believed to have been erected over the site of Buddha's cremation.

Fleet, J.F., 1888, *Inscriptions of the Early Gupta Kings & Their Successors*, Corpus Inscriptionum Indicarum, 3, Calcutta. Mitra, D., 1971, *Buddhist Monuments*, Calcutta, pp. 69-71. Patil, D.R., 1957, *Kuśinagara*, Delhi.—A. GHOSH

Kuskur, Dt Dharwar. Early historical [4.18.11] site. See ANVERI. (Same as KUSHUR?).

IAR 1959-60.

Kusumbhar. See CHANDRAPRABHA VALLEY.

Kusumjatra, Dt Birbhum. Site with black-and-red ware (of unspecified nature).

IAR 1971-2.

Kusyami, Dt Mainpuri. PGW [11.14] site.

IAR 1960-1.

Kutchbal, Dt Bijapur. Microliths (of unspecified nature).

IAR 1960-1.

Kuthanur, Dt Palghat. Megalithic [4.17.10] site with cist burials.

IAR 1969-70.

Kuthagoan, Dt Chandrapur. Late Stone Age (Mesolithic [4.5]) site.

IAR 1970-1.

Kuthman, Dt Kangra. Stone Age tools on the Gaj Khad showing Neolithic [4.6.2] affinities.

IAR 1967-8.

Kuthur¹, Dt Cannanore. Rock-cut caves, possibly Megalithic [4.17.10].

IAR 1960-1.

Kuthur², Dt Trichur. Megalithic [4.17.10] site.

IAR 1966-7.

Kutlubari, Dt Bankura. Microliths (of unspecified nature).

IAR 1959-60.

Kuttalam, Dt Tirunelveli. Megalithic [4.17.9] site yielding cairns.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Kuttalvadi, Dt Mysore. Neolithic [4.6.9] remains.

IAR 1960-1.

Kuttampuli, Dt Tirunelveli. Situated round a *teri* [9.5] lying immediately n. of the Tambraparni river. The tools may be classified as: blade-flakes, flakes, blades, hollow scrapers, discoids, chopping tools, lunates, transverse arrowheads, simple points, asymmetrical points, unifacial points and blade cores. Stone tools and potsherds occur on the surface but their association is uncertain.

The potsherds are of the Black-and-red (Megalithic [11.15.3], Ware. See KOOTAMPULI.

AI, 12, 1956, pp. 9-10.

Kuttippala, Dt Malappuram. Rock-cut cave [4.17.10] yielding a red-slipped bowl of Russet-coated Painted Ware [11.22] with wavy lines.

IAR 1970-1.

Kutwar, Dt Morena. The mound along the river Asan yielded sherds of black-and-red ware, PGW [11.14] and NBPW [11.16] as also pottery of later periods. Of these the PGW was found in profusion. Terracotta figurines, fragments of copper vessels, beads of carnelian and terracotta were also found.

IAR 1970-1.

Kuvadla. See PURNA VALLEY.

Kuvalaikanni, Dt Tirunelveli. Prehistoric site (of unspecified nature).

Cammiade, I.A., *Gazetteer of Tinnevely Dt*, p. 409. ASI-AR 1936-7.

Kuvalli, Dt Bijapur (?). Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3]) tools.

IAR 1963-4.

Kwardiya, Dt Bharatpur. Site yielding PGW [11.14] and black-and-red ware.

IAR 1970-1.

Kyaddigeri, Kyadigeri, Dt Bijapur. Megaliths [4.17.8] with passage chambers and cairn circles.

IAR 1965-6. Sundara, A., 1975, Early Chamber Tombs of s. India, Delhi, p. 227.

Kyaturu, Dt Mahbubnagar. Lower Palaeolithic [4.2] site.

IAR 1967-8.

L

Labpur, Dt Birbhum. Microliths (of unspecified nature).

IAR 1964-5.

Lachchhagiri (25°21'; 82°12'), Dt Allahabad. NBPW [11.16] was found in the eroded sections along an extensive mound showing brick structures and ring-wells [14.15].

AI, 10 & 11, 1954 & 1955, p. 144. IAR 1961-2.

Lachhmipura, Dt Bhilwara. Microliths (of unspecified nature).

IAR 1958-9.

Ladai, Dt Kutch. Parallel-sided blades in crested-ridge technique.

IAR 1955-6.

Ladbediya, Dt Mirzapur. Rock-shelter with paintings [13].

Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad, pp. 55, 86.

Ladhora, Dt Ambala. PGW [11.14] site.

IAR 1964-5.

Ladhot (Chugaala), Dt Rohtak. Early historical [4.18.1] site.

Jour. Haryana Studies, 3, 1, p. 5.

Lagadvohal Pada, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) site.

IAR 1966-7.

Lagba, Dt Bhagalpur. Microliths and black-and-red ware (both of unspecified nature).

IAR 1963-4.

Lahachura, Dt Hamirpur. Early Stone Age (Lower Palaeolithic [4.2]) tools.

Lahagal, Dt Indore. Chalcolithic site yielding Malwa [11.10], Banas [11.6.2] and Kayatha Wares [11.7].

IAR 1970-1.

Lahana, Dt Ujjain. Early historical [4.18.7] site.

IAR 1971-2.

Lahanda nullah, Dt Allahabad. From the banks of this nullah, an affluent of the BELAN, Early (Lower Palaeolithic [4.2]) Middle (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) tools were obtained. Megaliths [4.17.3] were noticed near by.

IAR 1966-7.

Lahar, Dt Bhind. NBPW [11.16] site.

IAR 1957-8.

Lakameta, Dt Chandrapur. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1961-2.

Lakha, Dt Ujjain. Early historical [4.18.7] site.

IAR 1971-2.

Lakha Dora¹, Dt Ganganagar. PGW [11.14], impressed pottery, terracotta animal figurines and a ball and a shell bead. See SARASVATĪ VALLEY.

Unpublished.

Lakha Dora², Dt Ganganagar, PGW [11.14] and RANG MAHAL WARE [11.24], terracotta figurine, shell bangles and beads. See SARASVATĪ VALLEY.

Unpublished.

Lakhabaval (22°24'; 70°00'), Dt Jamnagar. Excavation at the site, about 14 km n.e. of Jamnagar, revealed three Pds. Pd I had pottery of thick fabric like that of Pd II A and B of RANGPUR. Pd II contained Red Polished Ware [11.23] and considerable quantities of coarse black-and-red painted pottery. Pd III represented a very late occupation on the mound with crude rubble structures and late medieval coins.

IAR 1955-6. AI, 18 & 19, 1962 & 1963, p. 206.

Lakhahar, Dt Allahabad. Painted rock-shelters [13].

IAR 1969-70. Misra, V.D., 1977, Some Aspects of Indian Arch., Allahabad, p. 55.

Lakhajaur (Badi Jamunjhiri), Dt Raisen. Lower and Upper Palaeolithic [4.2, 4] site. In the vicinity are painted rock-shelters [13].

IAR 1970-1.

Lakhania, Dt Mirzapur. Rock-shelter with paintings [13].

Misra, V.D., 1977, Some Aspects of Indian Arch., Allahabad, p. 55.

Lakhan Timbo, Dt Jamnagar. Site in the Aji valley with Harappa [11.36] Ware and coarse corrugated ware.

IAR 1960-1.

Lakhanka, Dt Bhavnagar. Harappa [4.9] site. See BOKHALIDHAR.

IAR 1971-2.

Lakhanvara, Dt Jabalpur. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1958-9.

Lakhapur¹, Dt Allahabad. Upper Palaeolithic [4.4] and Megalithic [4.17.3] site.

IAR 1969-70.

Lakhapur², Dt Chanda. Late Stone Age (Mesolithic [4.5]) tools.

IAR 1962-3.

Lakhapur³, (23°33'; 70°28'), Dt Kutch. The ceramic content included the Harappa [11.3] red, buff, crude

black-and-red and the reserved-slip wares. Some jars and dishes in red ware were comparable with RANGPUR II A and II C. The reserved-slip ware was represented by sherds painted in black with horizontal bands over light-grey background, comparable with similar sherds from LOTHAL A. A jasper fluted core and a flake and blade were some of the other finds. Coarse black-painted red ware akin to the RANG MAHAL Ware [11.24] and a red-slipped cream ware were also found.

IAI 1965-6; 1970-1. Chakrabarti, D.K., 1975-6, in *Purātattva*, 8, p. 159.

Lakhari, Dt Jabalpur. Microliths (of unspecified nature).

IAI 1959-60.

Lakhavav¹ (21°51'; 71°27'), Dt Amreli. Site with Lustrous Red Ware [11.9] corresponding to RANGPUR II C and III.

AI, 18 & 19, 1962 & 1963, p. 206.

Lakhavav², Dt Bhavnagar. Harappa [4.9] site in the Kalubhar valley.

IAI 1960-1.

Lakhiyar Viyaro, Dt Kutch. Lower [4.2] and Middle Palaeolithic [4.3] and historical site.

IAI 1970-1.

Lakhmantikalan, Dt Saharanpur. Harappa [4.9] and OCW [11.5] site.

IAI 1966-7.

Lakhmapur, Dt Hardoi. Huge mound on the bank of the river Garruh with sherds of the PGW [11.14] and NBPW [11.16], a sprinkler, a fragment of Red Polished Ware [11.23] and four Muslim copper coins.

IAI 1965-6.

Lakmi-kheda, Dt Dhule. Palaeoliths and microliths (of unspecified nature).

IAI 1959-60.

Lakhnaur Sahib, Dt Ambala. PGW [11.14] site.

IAI 1963-4. Suraj Bhan, 1976, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 123.

Lakhneswar-dih, Dt Ballia. Excavation yielded NBPW [11.16] besides stone and terracotta objects.

IAI 1956-7.

Lakhu, Dt Aligarh. Early historical [4.18.1] site.

IAI 1962-3.

Lakhond, Dt Kutch. Lower and Middle Palaeolithic [4.2, 3] site.

IAI 1967-8.

Lakhat, Dt Kutch. Harappa Ware [4.9] and early historical ware.

IAI 1958-9.

Lakkangaon, Dt E. Nimar. Microliths (of unspecified nature).

IAI 1958-9.

Lakkundi¹, Dt Bijapur. Chalcolithic [4.14.8] site. See ALMEL.

IAI 1959-60.

Lakkundi², Dt Mysore. Black-and-red [11.15.3] and Russet-coated Painted [11.22] Wares.

IAI 1961-2.

Lakkur, Dt Mysore. Megalithic burial [4.17.8].

IAI 1968-9.

Lakra, Dt Mirzapur. Microliths (of unspecified nature).

IAI 1962-3.

Lakshmanagutta, Dt Khammam. Megalithic site with dolmens [4.17.7] in Bhadrachalam Taluka.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Lakshman-Tila, Dt Lucknow. PGW [11.14] and NBPW [11.16] site.

IAI 1955-6; 1962-3.

Lakshmeshwar, Dt Dharwar. Early historical [4.18.11] site. See ADERKALTI.

Lakshmigudda, Dt Gulbarga. Megalithic [11.17.8] site.

AR Hyderabad Arch. Dept, 1933-4, p. 7.

Lakshmipur¹, Dt Bellary. Neolithic [4.6.9]-Chalcolithic [4.14.8] site.

IAI 1962-3.

Lakshmipur², Dt Mysore. Neolithic [4.6.9], Megalithic [4.17.8] and early historical [4.18.11] site.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 72.

Lakshmipuram, Dt Madurai. Megalithic site with terracotta urns [4.17.9].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Lakshnai, Dt Mainpuri. PGW [11.14] site.

IAI 1961-2.

Lakueswar Dih, Dt Ballia. Site with NBPW [11.16] besides Kushan terracottas and a stone image of Śiva of rare variety.

IAI 1955-6.

Lalapur¹, Dt Banda. Situated at a distance of about 100 km from Allahabad on the Allahabad-Banda road, Palaeolithic [4.2] tools have been collected from the bed of a nullah joining the Ohan, a tributary of the Paisuni. The tools, all in a fresh condition, comprise cleavers, scrapers and handaxes. The Middle Palaeolithic [4.3] assemblage includes cores, flakes and finished tools comprising scrapers, points and blades. Some are highly patinated.

Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad, pp. 34 etc.

Lalapur², Dt Bhagalpur. Beads and Microliths of Chalcolithic [4.14.6] assemblage.

IAI 1965-6.

Lalbedia. See CHANDRAPRABHA VALLEY.

Lal Bhagat, Dt Kanpur. Site with red-ware sherds.

IAI 1970-1.

Lal-Bijora, Dt Allahabad (?). Middle Stone Age (Middle Palaeolithic [4.3]) tools comprising blades, flakes, scrapers and cores.

IAI 1962-3.

Laligam, Dt Dharmapuri. Late Stone Age (Mesolithic [4.5]) and Megalithic burial [4.17.9] sites.

IAI 1969-70.

Lalitpur¹ (24°42'; 78°25'), Dt Lalitpur. Palaeolithic tools of Series I and II (Lower and Middle Palaeolithic [4.2,3] and microliths (of unspecified nature) were discovered near the place.

IAR 1956-7; 1959-60; 1960-1; 1961-2; 1963-4. Misra, V.N., 1975-6, in *Purātattva*, 8, pp. 29-31.

Lalitpur², Dt Saharanpur. PGW [4.14] site.

IAR 1965-6.

Laliyo, Dt Bhavnagar. Red Polished Ware [11.23] site in the Shetrunji valley.

IAR 1960-1.

Lal-Kot (28°32'; 77°11'), Dt Delhi, an irregular fortified enclosure within which the famous Qutub-Minar stands. It is reputed to have been built by a Tomara Anangapala, possibly to be identified with Anangapala II, who figures in certain dynastic lists and whose name with *samvat* 1109 (A.D. 1052) is inscribed on the iron pillar of Chandra. Its extension on the n. and w., bounded again by massive stone walls, is known as QILA RAI PITHORA and is ascribed to the Cāhamāna king Prthvirāja III, also known as Rai Pithora, who was defeated by Muhammad Ghūrī. The two enclosures together have long been known as the first city of Delhi of early medieval times. Some points along the Lal-Kot walls and inside it were probed in 1957-8 and 1958-9 by the writer on behalf of the ASI (IAR 1957-8, p. 24; 1958-9, p. 25) in order to examine the reasons behind the obvious structural differences between the w. and e. flanks of the Lal-Kot rampart walls and also to ascertain if the pre-Sultanate occupational levels could be distinguished from the Sultanate ones.

The uncovering of the debris-covered wall to the n. of Ādham Khān's tomb, which was generally regarded as a partition wall, has shown that this was the w. arm proper of the Lal-Kot, and that against it was later built an extension, which formed part of the QILA RAI PITHORA complex but was mistakenly taken as the w. wall of Lal-Kot. The structural features of the newly uncovered wall tallies with those of the e. wall of Lal-Kot.

The exposed stretches of the hitherto concealed wall show that overlying the bed-rock and provided with a 1.52 m wide stones apron the original wall was built of rubble stones to a height of 2.45 m. Its width varied between 2.48 and 3.05 m. Later the height was raised by the superimposition of kiln-burnt bricks, 30 courses of which still survive. A flight of steps, built of stones up to the original rubble-built height, and of bricks to the height of brick courses, led to the top of the wall. On the exterior face the wall was first provided by a brick revetment which survived in parts. Later, when the brick revetment had been robbed or had become dilapidated, a facing of neatly dressed quartzite stones, tied with iron dowels, was given to the ramparts. Integral with the

original construction are semicircular bastions at irregular intervals. To the e. of the Qutub-Minar where Delhi-Gurgaon bye-pass runs over the Lal-Kot walls, the quartzite facing is largely robbed. Some further clearance in this area carried out later has exposed a barbican with gateway.

A small trench to the s. of the Qutub-Minar has indicated that this was the residential part of Lal-Kot, at least in Sultanate times, for on either side of a 1.52 m wide street here flanked portions of houses. Drains from these houses join an open lime-plastered gutter running in the middle of the street, which show several road levels. Another spot, where a black stone image of Viṣṇu dated in *samvat* 1204 (A.D. 1147) had been found, was also tapped. On a stone platform here is seen the exterior plan of a *pañca-ratha* shrine. Thickly built brick houses have been uncovered here one above the other.

The pottery from these excavations can be divided into two phases. From the lower levels come plain red wares, sometimes slipped, the main types of which correspond generally with those of the topmost stratum of AHICCHATRĀ, c. 850-1100. From the middle depth of the upper levels come glazed ware and associated black-slipped grey ware. The two phases are separated here by a deposit of ash and earth mixed with debris.

—Y.D. SHARMA

Lallapeta, Dt Nellore. Lower Palaeolithic [4.2] site.

IAR 1966-7.

Lal Mijaura, Dt Palamau. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1971-2.

Lalparda, Dt Jamnagar. Site with Red Polished Ware [11.23].

IAR 1957-8.

Lalpur¹, Dt Kanpur. NBPW [11.16] site.

IAR 1965-6.

Lalpur², Dt Purulia. Microliths (of unspecified nature).

IAR 1959-60.

Lalpur³, Dt Shahdol. Tools of the Middle and Late Stone (Middle Palaeolithic [4.3] and Mesolithic [4.5]) Ages.

IAR 1962-3.

Lalpurawa, Dt Mirzapur. Cairn circles and dolmenoid cists [4.17.3].

IAR 1962-3.

Lal Qila, Dt Bulandshahr, on the left bank of the Kali Nadi, a tributary of the Ganga, adjacent to village Narainpur, 24 km from Anupshahr (28°30'; 78°15'), the Tahsil headquarters, excavated by the writer on behalf of the Aligarh Muslim Univ. between 1969-70 and 1970-1 (IAR 1969-70, p. 38; 1971-2, p. 45). It is the first OCW [11.5] site to yield definite evidence of habitation and associated objects. Though the thickness of the deposit is only between 1 to 1.5 m three successive phases have

been demarcated on the basis of different floor levels. An ordinary rammed earth floor damaged at places by water has been exposed in Phase I immediately lying over the natural soil. The burnt patches on it are perhaps indicative of a fire-place or a cooking spot. The floors of the later phase are in a better state of preservation and large in area. Out of these two clay-plastered floors belong to Phase II. These floors are reinforced with potsherds rammed horizontally and have a series of post-holes. The use of mud brick is evident in this phase. Though no complete house plan can be determined, a corner probably joining two walls of five courses of a room has been exposed. Besides a floor a mud platform made of rammed earth is found associated with it. The structures are badly damaged and it is not possible to determine the exact thickness of the walls, but at places the bricks are laid in a single course joined together with mud mortar. Mud clods and brickbats have been frequently used. Debris of burnt brick along with mud brick have also been noticed here and there in Phase III. Except a wedge-shaped brick, $30 \times 21 \times 7.5$ cm, no complete burnt brick has been found. The exact size of the mud bricks cannot be determined due to their decomposed condition, but it appears that their sizes vary between 27 to 30 cm in length, 20 to 23 cm in width and 7.5 to 10 cm in thickness. The occurrence of reed and bamboo-marked burnt plasters, mud clods and burnt patches indicates thatched roof and walls of wattle and daub.

The pottery complex is generally of red ware varying in shades from ochrous to brownish. However a few sherds, greyish probably due to ill-firing, also occasionally occur. The pottery, in bulk wheel-made, is usually of well-levigated clay varying in fabric from fine to coarse with the medium fabric dominating. It is sturdy and well-fired and is treated generally with a fine slip and occasionally with a wash. A fairly large number of sherds are decorated with painting in black pigment, incised designs, graffito marks [20.1] and applied devices.

The characteristics of the OCW usually noted at some sites, viz. rolled edges, porous and powdery surface, ill-firing, etc., are rare at Lal Qila. This major difference may be due to the fact that the pottery here comes from a habitational site whereas elsewhere it belongs to sites that were badly affected by water-logging (Lal, 1968-69, pp. 857-63) or other weathering conditions.

The pottery complex (Gaur, 1971-2, pp. 10-12) includes a variety of shapes, the majority of which conforms to the types recovered from ATRANJIKHERA and SAIPAI. They may be classified broadly into seven groups: (i) storage jars, (ii) vases, (iii) basins, (iv) bowls, (v) lids, (vi) dishes-on-stand (?), and (vii) miniature pots. Of these the vases in which vertical handles are attached between the rim and the shoulder deserve spe-

cial mention. In one bowl a set of legs is attached to its base, while a few large basins have horizontally or vertically attached loop handles just below the rim on either side, one such handle being of a twined rope pattern. The base of the vases, bowls and basins is flattish, discoid or ringed. Though not a single complete dish-on-stand has been found, broken pieces of its different parts indicate that the type also occurs at Lal Qila. A variety of interesting miniature pots, generally complete, includes different types of bowls, vases, pots and lids with pinched oblong knob.

Lal Qila has considerably increased our knowledge about the technique and variety of painted motifs on the OCW. They appear to have been finely executed with bold hand, the chief characteristic being an emphasis on the rim, neck and shoulder as the area for decoration. The most significant painting is on the shoulder of pot—an elongated humped bull having prominent crescentic horns, muscular thighs and slightly raised straight tail. Another interesting motif on the same pot is on the either side of the bull—a serrated leafy motif with a spiral at the end. A design like a row of ribbon knots and some floral motifs deserves mention. The other designs include thick parallel bands on the shoulders, horizontal band within two wavy lines, thick vertical, horizontal and in a few cases wavy bands, loops joined by a pair of horizontal bands on the shoulder, oblique parallel lines, slanting and vertical lines emerging from horizontal bands, crescentic comb pattern, hatched triangles between two sets of horizontal parallel lines, square with diagonals, circles, semicircles, check pattern, etc.

Compared to ATRANJIKHERA the incised designs here are much less in number, the incised lines being deeper and longer. The designs include incised oblique strokes on cords, crescent-like notches, deep dashes, oblique and straight lines, check pattern, etc., often accompanied with paintings and occasionally with applied and pinched decorative devices.

A significant discovery is of graffito marks noticed for the first time on OCW sherds particularly on the deep bowls. These marks include symbols of a ladder (?), cross, cross in which both ends have arrow-like tips, two parallel lines cut by a transverse line, three straight lines intersecting each other at one single point, a set of three oblique lines cut by two transverse lines, four hatched quadrangles joined together, a trident-like design, etc. ✓

The five discovered copper objects include a pendant, a bead (?), an arrowhead, a celt fragment and an indeterminate object.

The terracotta finds include two unique female figurines [17.2], several bangle pieces, plain and incised balls, wheels [16.19], beads, gamesmen [6.7.2], pieces of crucibles [16.4] and pottery discs [6.73]. A few objects of indeterminate use have also been recovered. Out of the

two fascinating handmade female figurines one is in a good state of preservation. It has a short head, bulging eyes with holes, in the centre denoting pupils, pinched parrot-beaked nose, depressed cheeks, broad jaws with protruding lips divided by a horizontal slit, a protruding chin and an elongated neck. The hands have not been modelled, each shoulder having a transverse hole for hanging purposes. It has prominent straight breasts with pointed nipples. The rest of the body is broken. The second figurine differs from it in two respects it does not net-sinkers [6.16], etc. Bone objects include arrow-heads, points, styluses, etc.

Among other finds are carnelian and soapstone beads, an agate point, querns, mullers, pestles [6.19], net-sinkers [6.16], etc. Bone objects include arrow-heads, points, styluses, etc.

The people appear to have reared cattle as bones have been found in large numbers. The cut marks on many bones suggest that meat figured in the diet. Grain finds suggest that agriculture was in a developed stage (Chowdhury *et al.*, 1972, pp. 531-3).

Thermoluminescent dating of a few potsherds by the Arch. Research Laboratory at Oxford have placed them somewhere between 2030-1730 B.C., the mean date being 1880 B.C. This strengthens the view that the OCW culture was contemporaneous with the Harappa culture [4.9] but according to the evidence so far gathered it was independent of the latter. The excavation at SAIPAI has confirmed that the authors of the OCW and the Copper Hoards [4.11] were the same people (Lal, 1971-2, pp. 46-9).

Chowdhury, K.A., Saraswat, K.S., Hasan, S.N., & Gaur, R.C., 1972, in *Science & Culture*, 37. Gaur, R.C., 1970-1, in *Purātattva*, 4; 1971-2, in *ibid.*, 5. Lal, B.B., 1968, in *American Anthropologist*, 170; 1971-2, in *Purātattva*, 5.—R.C. GAUR

Lambalakudi, Dt Pudukkottai. Megalithic [11.18.8] site.

Manual of Pudukkottai State, 1944, 1, 1, p. 515-18.

Lametaghat, Dt Jabalpur. Palaeoliths (of unspecified nature), scrapers, flake-blades and microliths (also of unspecified nature).

IAR 1960-1.

Lamgorawa, Dt Mirzapur. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1970-1.

Lamheta-Ghat, Dt Jabalpur. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1964-5.

Langer, Dt Nagaur. Microlithic (of unspecified nature) site.

IAR 1964-5.

Langewala (29°11'; 75°41'), Dt Hissar, RANG MAHAL [11.24] site.

IAR 1967-8.

Langhania, Dt Sitapur. Terracottas in Śunga style.

IAR 1958-9.

Langhnaj (23°8'; 72°5'), Dt Mahesana, located about 59 km due n. of Ahmadabad, a habitation-cum-cemetery site, similar to many other sites located on river banks and especially on the sandy alluvial plains of n. and c. Gujarat around small hillocks of wind-blown deposits or dunes which enclose almost perennial small lakes, along with scrub vegetation that are ideally suited to support small and big game and fish. It was excavated by Sankalia, 1949, 1956, 1965, and his colleagues Clutton-Brock, 1965, and Erhardt, 1965, at various intervals between 1942, 1944, 1947 and later on. Zeuner, 1950, 1952, worked on the chronology, and Subbarao, 1952, with his colleagues (Malik, 1966) also excavated other similar sites in Gujarat. Excavation was conducted at a contour level of 67.06 and 68.58 m and the total excavated area by now is about 1200 sq m. It is a Mesolithic [4.5] site of hunters and fishermen, characterized by microlithic industries along with remains of pottery, metal, pieces of haemitite, animal bones and 14 human skeletons. Charred and burnt bone remains indicate the knowledge of fire and cooking although no remains of any hearth and ashes have been found.

Excavation has revealed a deposit which is basically of sandy silt composition, only the upper two layers being generally clear. The top 1 m layer is dark-brown in colour, while the lower 1 m layer is of light-brown colour that merges with the still lower deposits that are full of *kankar* or lime nodules. Most of the finds are encrusted with lime deposits. However chemical analysis through soil testing with acid indicates a buried-soil horizon at a depth varying between 86 cm to 1.27 m representing a climatically wet phase during the first occupation.

While occupational debris is found in the top 2.4 m most of this is concentrated in the upper 1.5 m and comprises microliths and pottery. But at the junction of the first and second layers, at about 1 m, a ring-stone (mace-head), a hunting knife of pure copper (depth 96 cm) and small sherds have been found. In the upper 1 m some modern-looking pottery, along with an iron arrowhead with a mid-rib and tang (depth 76 cm) and bones, has also been found.

The main occurrence of microliths is between 1 to 1.5 m, but they do not show any typological evolution. The raw material utilized for microliths is mainly cryptocrystalline in nature, such as chert, chalcedony and quartz, though occasionally carnelian and rarely lydianite are also used. The lithic industry is based upon the production of small parallel-sided blades prepared from cores through indirect percussion by the use of bone or wooden hammer. The main stone tool types are: triangles, trapezes, lunates, asymmetrical points, borers or awls, notched and partly retouched flakes, blunted-back blades, burins, scrapers, fluted cores and

macro-scrapers. The number of geometric tools and burins is small, and the percentage of reject waste material from here and allied sites is almost 90%. This indicates that the artefacts were produced at the occupation site itself.

The other interesting finds include quartzite pebbles, a rhinoceros shoulder blade with pits, perhaps used as an anvil, a hammerstone, two small ground-stone axes of chlorite-schist and a large quartzite ring stone, probably used as a mace-head or a weight for a digging stick. Either the cultural remains indicate a stage of 'incipient cultivation', or the presence in the later period of pottery as well as copper and iron tools suggests cultural contacts with the other settled contemporary Chalcolithic [4.14] and Iron Age [4.16] communities.

The presence of 14 human skeletal remains, with their general orientation from e. to w., indicates clear burial practices, 13 being placed in a flexed and one in an extended position. With these skeletons have been found beads of dentalium shells, which must have been brought from the distant sea, and quartzite pebbles are kept near the head. Possibly the skulls were smashed before burial. Racially the human remains are considered to vary from the Mediterranean to the Veddo types. Remains of animals [15.1] are mainly mammalian and the range includes several species of deer (spotted and hog deer, swamp deer or *barasinga* and black-buck), wild boar, *nilgai*, bovines (possibly cattle or Indian buffalo), the Indian wolf, rat, squirrel and mongoose. Most of these animals are found even today in similar climatic areas of the subcontinent.

Pottery remains are in the form of small sherds which do not indicate any shape. But it is clear that pots were made mostly by hand, and also some on the wheel. The four main ceramic types are: (1) burnished red ware, (2) burnished black-and-red ware [11.6.1] similar to RANGPUR, (3) incised coarse red ware, and (4) scooped or rusticated ware.

The dating of Langhnaj is not very clear as the layers are not well-differentiated, and as the artefactual remains do not show any typological evolution. But a comparison with other sites in the area gives a relative dating, i.e., the industry is akin to microliths found in the pre-Chalcolithic levels. Preliminary investigations on charred bones suggest a date of 2000 B.C. for the site.

Clutton-Brock, J., 1965, *Excavations at Langhnaj: The Fauna*, Poona. Erhardt, S., & Kennedy, K.A.R., 1965, *Excavation at Langhnaj: Human Remains*, Poona. Malik, S.C., 1966, in *Artibus Asiae*, 28, pp. 162-74. Sankalia, H.D., 1956, in *Jour. Gujarat Research Soc.*, 18, 4; 1965, *Excavations at Langhnaj 1944-63: Archaeology*, Poona. Sankalia, H.D., & Karve, I., 1949, in *American Anthropologist*, 51, 1. Subbarao, B., 1952, in *Maharaja Sayajirao Univ. Jour.*, 1, 1. Zeuner, F.E., 1950, *Stone Age and Pleistocene Chronology in Gujarat*, Poona; 1952, in *Man*, 182.—S.C. MALIK.

Lanjapoluru, Dt Kurnool. Neolithic [4.6.8] site.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras, p. 92.

Lanjwada, Dt Bidar. Early historical [4.18.11] site. [See 11.22].

Karnataka Bharati, 11, 3.

Lank, Dt Tonk. Non-Megalithic Black-and-red Ware [11.6] and Red Polished Ware [11.23].

IAR 1958-9.

Lankapalem, Dt Visakhapatnam. Mesolithic [4.5] site.

Jour. Andhra Hist. Soc. 35, 1976, pp. 323-6.

Laowar, Dt Sidhi. Tools of the Early and Middle Stone (Lower and Middle Palaeolithic [4.2, 3]) Ages.

IAR 1962-3.

Lapari, Dt Allahabad. Neolithic [4.6.3] site.

IAR 1970-1.

Lathaura, Dt Varanasi. Black-and-red ware (of unspecified nature).

IAR 1962-3.

Latifpur, Dt Saharanpur. PGW [11.14] site.

IAR 1965-6.

Latifshah dam, Dt Varanasi. NBPW [11.16] site.

IAR 1963-4.

Lattavaram hill, Dt Anantapur. Neolithic [4.6.8] habitation site. See AKKAMMAKONDA. (Same as following?).

IAR 1965-6.

Lattavaramu hill, Dt Anantapur. Neolithic site yielding celts, adzes, chisels, scrapers, flakes, hammer-stones, and cores. (Same as preceding?).

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Lauriya-Nandangarh, Dt W. Champaran, 30 km n.-w. of Dt headquarters Bettiah. Lauriya deriving its name from a pillar (*laur*) of Aśoka standing there and Nandangarh (variant Nanadgarh) being the name of a mound about 2 km to the s.-w. of the pillar. Lauriya has 15 *stūpa* mounds in three rows, each row upwards of 600 m long; the first row begins near the pillar and runs e. to w., while the other two are at right angles to it and parallel to each other. A. Cunningham (*ASI-AR*, 1, p. 68) partially excavated one of them in 1862 and found a retaining wall of brick (size 51×20 cm) which he regarded as late. A few years later H.B.W. Garrick opened up several mounds with indifferent results (*ibid.*, 16, p. 104; 22, p. 47). In 1905 T. Block (*ASI-AR* 1906-7, p. 119) excavated four mounds, two in each of the n. to s. rows. In two of them he found in the centre of each, at a depth of 1.8 to 3.6 m, (probably meaning 1.8 m, in one and 3.6 m in the other) a gold leaf with a female figure standing in frontal pose and a small deposit of burnt human bones mixed with charcoal. The core of the mounds was, according to him, built of layers of yellow clay, a few cm in thickness, with grass leaves laid in between. Further down in one of them he found the stump of a tree. His conclusions were that the 'earthen barrows' had some connection with the funeral rites of

the people who erected them, and he found an explanation of the phenomena encountered by him in the rites of cremation and post-cremation prescribed in the Vedas. On the basis of this hypothesis he identified the gold female figure as Prthvi, the earth-goddess, and ascribed the mounds to a pre-Mauryan age. After him the mounds came to be known rather loosely as Vedic burials mounds.

✓ In 1935-6 N.G. Majumdar (*ASI-AR 1935-6*, p. 55; 1936-7, p. 47) re-examined four mounds with important results. He found that all of them were earthen burial memorials with burnt-brick revetments, two being faced with a brick lining in a double tier, so that there was no justification for regarding them as more earthen barrows. He also pointed out that the gold leaves found by Bloch had their exact replica in the *stūpa* at PIPRAWA which is definitely a Buddhist *stūpa* of 300 B.C. or earlier. The respective Lauriya *stūpas* might be of a comparable date and there is nothing to connect them with Vedic burial rites. The layers of yellow clay which had a share in the building up of the Vedic theory of Bloch are according to the observations of the writer nothing but mud bricks, husk and straw being a not uncommon ingredient of ancient brick.

Excavation of the Nandangarh mound was started by Majumdar in 1935 (*ibid.*) and continued by the writer till 1939 (unpublished). Before excavation the mound had a height of about 25 m and a circumference of about 460 m, standing at the e. edge of a brick fortification about 1.6 km in perimeter and roughly oval of plan, no doubt enclosing a habitation area, perhaps the headquarters of a clan that was responsible for the erection of the Lauriya *stūpas*. Surface finds indicate that it was inhabited in Śuṅga (if not earlier) and Kushan times.

✓ On excavation Nandangarh turned out to be a stupendous *stūpa* with a polygonal base; with its missing dome which must have been proportionately tall, the *stūpa* must have been one of the highest in India. The walls of the four cardinal directions at the base (only the w. and partly the s. one were excavated) are each 32 m long and the wall between each has a zigzag course with 14 re-entrant and 13 outer angles. The walls flanking the first and second terraces following the polygonal plan of the base; those pertaining to the upper terraces were circular. An extensive later restoration hid the four upper walls and provided new circular ones; the polygonal plan of the walls of the base and the first terrace were left unaltered. The top of each terrace served as a *pradakṣiṇā-patha*, though no staircase to reach the top was found in the excavated portion.

The core of the *stūpa* consists of a filling of earth with a large number of terracotta animal and human figurines [17] in the Śuṅga and Kushan idiom, a few punch-marked coins and cast copper coins [3.1], terracotta

sealings [3.2] of the 2nd and 1st centuries B.C. and iron objects. As the earth was brought from outside, obviously from a part of the habitation area to the s. of the *stūpa* where the resultant pond is still visible, the objects are understandably unstratified.

In a shaft dug into the centre of the mound though an evidently disturbed filling was found at a depth of 4.3 m the remnants of a brick altar 1 m high; it has been previously truncated, perhaps by one of the many explorers of the 19th and early 20th centuries. Further down at a depth of 4.6 m from the bottom of the altar and of 11 m from the surface of the mound was found the top of an intact miniature *stūpa*, complete with a surmounting square umbrella. This *stūpa*, is 3.6 m in height and is polygonal on plan. An examination of its interior yielded nothing, but beside there lay a tiny copper vessel with a lid fastened to it by a wire. Inside the vessel was a long strip of thin birch-leaf manuscript, which having been squeezed into it was so fragile that it was impossible to spread it out thoroughly. The bits that could be extricated were sufficient to show that the manuscript was that of a Buddhist text (probably the *Pratītya-samutpāda-sūtra*, as the word *nirodha* could be read a few times) written in characters of the 4th century A.D. No excavation was undertaken at a further depth.

Ghosh, A., 1950, in *Archaeology in India*, Delhi, pp. 59-61. —A. GHOSH

Lavacha, Dt Surat. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1963-4.

Laxmanapura, Dt Mysore. Megalithic burials of cairn and cist types [4.17.8].

IAR 1963-4.

Laxmipur, Dt Monghyr. Middle Palaeolithic [4.3] site.

Burman, D.K., 1976, in *Arch. Congress & Seminar, 1972*, Kurukshetra.

Leelapur, Dt Varanasi. Early historical black-and-red ware and NBPW [11.16].

IAR 1962-3.

Lekhahia, Dt Mirzapur, with painted rock-shelters [13] and open-air settlements near village Bhainsaur, two of the former and three of the latter excavated by V.D. Misra of the Univ. of Allahabad (*IAR 1963-4*, p. 51). In the first open-air settlement the lowest layer was not a habitation deposit, but all the upper eight ones yielded microliths. Stratigraphically the earliest of them were parallel-sided blades, blunted-black blades, points, lunates and scrapers together with cores and unfinished tools. Next came both non-geometric and geometric types, the former predominating, followed by geometric types like triangles and trapezes associated with pottery, the quantity of which progressing increased towards the top. The other excavated open-air site yielded comparable results.

An excavated rock-shelter had paintings of diverse

styles, themes, colour and technique on its walls. In a pit cut into the bed-rock of the shelter were found two skulls and the mandible of an animal. Excavation of the floor of the shelter yielded as many as 17 extended human skeletons in graves within a depth of 42 cm, all with plenty of microliths. On the basis of the superimposition and overlapping of the burials eight burial periods could be recognized. Except in two which were oriented n.-s. the skeletons in all had an e.-w. orientation. With some skeletons were associated ochre and lateritic nodules which might have been used for paintings the rock walls. The occupation in the shelter was later on disturbed by extensive pits with copper beads and arrowheads, reminiscent of the Vindhyan Megalithic culture [4.17.3].

In the other excavated shelter the 20 cm thick deposit yielded geometric microliths and pottery.

Two ^{14}C dates are available for the Mesolithic occupation of Lekhahia: 1710 ± 110 and 2410 ± 115 B.C. Both the sample were uncharred bones which, we are warned, are not as good for ^{14}C determination as charred material (Agrawal *et al.*, 1974, p. 61).

Agrawal, D.P., & Kusumgar, S., 1974, *Prehistoric Chronology & Radiocarbon Dating*, Delhi. Misra, V.D. 1977, *Some Aspects of Indian Arch.*, Allahabad, pp. 53-7. Sharma, G.R., 1965, in Misra, V.N., & Mate, M.S., ed., *Indian Prehistory: 1964*, Poona, pp. 76-9. —A. GHOSH

Lekhahia², Dt Rewa. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAR 1963-4.

Lekurvali, Lekurwali, Dt Dhule. Microlith [4.17.8] and sometimes neoliths [4.6.9] were found in association with the black-on-red painted pottery and coarse grey ware, similar to that from the Chalcolithic levels at BRAHMAGIRI and BAHAL. The site also contained remains of burials and pots of Black-and-red Ware [11.15] bearing graffiti [20.1].

IAR 1957-8; 1958-9.

Le Malle, Dt Guntur. Megalithic [4.17.7] were discovered on the Guntur-Amaravati road.

IAR 1960-1.

Ler, Dt Kutch. Mesolithic [4.5] site.

IAR 1967-8.

Lidapisa hills, Dt Santal Parganas. Microliths (of unspecified nature) were found about 10 km to the right of the Jamtara-Dumka road from Jhorjukha.

* IAR 1961-2.

Liddar valley, Dt Srinagar (?). Early Stone Age (Lower Palaeolithic [4.2]) tools were found in deposits assignable to the Second Glacial and the Second Interglacial. A stonework industry including remains of dishes, bowls, etc., was brought to light on the mound overlooking the Liddar valley near a 10th century temple. See PAHALGAM.

IAR 1969-70.

Likhoda, Dt Ujjain. Early historical [4.18.7] site.

IAR 1971-2.

Likhunia, Dt Mirzapur. Painted rock-shelters [13].

Ghosh, M., 1932, *Rock Paintings & other Antiquities*, Mem. ASI, 24.

Liki Saira, Dt Purulia. Handaxes, cleavers, ovates and other tools of Acheulian assemblage [4.2] were recovered from the cliff sections of the river. On the basis of typology, patination and state of preservation the industry may be divided into an earlier and later phase.

IAR 1967-8.

Likheda, Dt Jabalpur. Microliths (of unspecified nature).

* IAR 1959-60.

Lilvadeva, Dt Panch Mahals. Late historical site.

IAR 1971-2.

Limb, Dt Satara. Early, Middle (Lower, Middle Palaeolithic [4.2, 3]) and Late Stone Age (Mesolithic [4.5]) tools.

IAR 1962-3.

Limbodra. See LIMODRA.

Limbwas, Dt Ujjain. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1971-2.

Limdi, Dt Bharuch. Late Stone Age (Mesolithic [4.5]) site.

IAR 1969-70.

Limoda, Dt Ujjain. Early historical [4.18.7] site.

IAR 1971-2.

Limodra, Limbodra, Dt Bharuch. Early historical [4.8.2] site.

IAR 1966-7; 1967-8.

Lingadahalli¹, Dt Anantapur. Neolithic [4.6.8] site yielding celts, adzes, scrapers, hammers, corn-crushers, mulers, etc.

Footte, R.B., 1916, *Indian Prehistoric & Proto-historic Antiquities*, Madras.

Lingadahalli², Dt Bellary. Ash-mound [14.3]

Footte, R.B., 1916, *Indian Prehistoric & Proto-historic Antiquities*, Madras, p. 93.

Lingadahalli³, Dt Bijapur. Site with Chalcolithic [4.14.8] material and Red Polished Ware [11.23]. See ALMEL.

IAR 1957-8; 1959-60.

Lingadahalli⁴, Dt Chikmagalur. Lower Palaeolithic [4.2] site.

Footte, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras. Seshadri, M., 1956, *Stone-using Cultures of Pre- & Proto-historic Mysore*, London, p. 15.

Lingadhal, Dt Dharwar. Neolithic [4.6.9] site.

IAR 1968-9.

Lingampalli, Dt Chanda. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1961-2.

Lingarajupalem, Dt Visakhapatnam. Black-and-red ware (of unspecified nature).

IAR 1959-60.

Lingsugur, Dt Raichur. Megalithic [4.17.8] site.

Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 65-7.

Livika-ka-Tapa, Dt Ballia. Early historical black-and-red ware [11.6].

IAR 1963-4.

Loadi, Dt Bankura. Historical remains. See KENDUA. IAR 1959-60.

Lodhwara, Dt Banda. Neolithic [4.6.3] polished stone axes and hammer-stones.

IAR 1961-2.

Lodipur, Dt Saharanpur. NBPW [4.16], Śunga-Kushan and medieval wares.

IAR 1964-5.

Lohagal, Dt Indore. Site with Kayatha Ware [11.7].

Wakankar, V.S., 1976, in *Arch. Congress & Seminar, 1972*, Kurukshetra.

Lohamancheru. See YELLESWARAM.

Lohapur, Dt Birbhum. Ruins of the late historical [4.19.6] (Pala) period.

IAR 1961-2.

Lohara, Dt Rupnagar. PGW [11.14] site.

Suraj Bhan, 1976, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 123.

Loharanwali, Dt Gurdaspur. Early historical [4.18.1] remains. See ACHAL-SAHEB.

IAR 1961-2.

Lohardaga, Dt Ranchi. Megalithic [4.17.4] burials. Also a so-called 'Asura' site [14.4].

Roy, S.C., 1921, *Jour. Bihar & Orissa Res. Soc.*, 6, p. 416. IAR 1963-4.

Lohat, Dt Mahendragarh. Harappa [4.9] site.

Suraj Bhan, 1976, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 126.

Lohgad, Dt Pune. Microlithic (of unspecified nature) site.

IAR 1959-60.

Lohiakhara, Dt Etah. Grey ware, Black-slipped Ware [11.13], red ware of the Śunga-Kushan period and medieval ware.

IAR 1970-1.

Lohiya Khera, Dt Gurgaon. PGW [11.14] and early historical [4.18.1] site.

Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.

Lokhari, Dt Banda. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1968-9.

Lokjuria, Dt Singhbhum. Lower Palaeolithic [4.2] site. See DHALBHUM.

Lokkanahalli, Dt Mysore. Black-and-red [4.15] and Russet-coated Painted [4.22] Wares.

IAR 1961-2.

Lolsar (16°09'; 74°50'), Dt Belgaum. Middle Palaeolithic [4.3] site. See GHATAPRABHA VALLEY.

Lonamati, Dt Allahabad. Late Stone Age (Mesolithic [4.3]) and Megalithic [4.17.3] site.

IAR 1963-4.

Lonhar, Dt Chanda. Middle Stone Age (Middle Palaeolithic [4.3]) tools comprising scrapers, blades and points.

IAR 1964-5.

Loni, Dt Meerut. PGW [11.14] and NBPW [11.16] site on the left bank of the Yamuna.

Sharma, R.P., 1976, in *Arch. Congress & Seminar, 1972*, Kurukshetra.

Lonikalam, Dt Medak. Lower, Middle and Upper Palaeolithic [4.2, 4] tools.

IAR 1963-4.

Lonikolyachi-Haveli, Dt Ahmadnagar. Sherds of thick grey ware together with early historical [4.18.9] pottery characterized by black-and-red and red wares.

IAR 1960-1.

Lonk, Dt Sabar-Kantha. Mesolithic [4.5] site.

IAR 1970-1.

Lonkhed, Dt Dhule. Microliths (of unspecified nature) and sometimes neoliths [4.6] were found in association with black-on-red painted pottery. Alongside was also found coarse grey ware, similar to that from the Chalcolithic levels at BRAHMAGIRI [4.14.8] and BAHAL [4.14.6]. See DHAMDAL.

IAR 1957-8.

Lonkheda, Dt Dhule. Middle (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) implements and Chalcolithic [4.14.6] burials.

IAR 1964-5; 1965-6.

Lordia, Dt Jodhpur. Rich microlithic (of unspecified nature) site on the left bank of a stream near the village 8 km s.-s.-e. of Phalodi.

Agrawal, D.P., 1978, in *Man & Environment*, 2, p. 75.

Lorka. See 4.6.3.

Lorkipalli, Dt Bolangir. Microlithic (of unspecified nature) site.

IAR 1963-4.

Lotapahar, Dt Singhbhum. Of the two excavated trenches, one near the n.-w. fringe of the Tantragupta hill on the left bank of the Sanjai at Govindpur and the other on the right bank of the same river at Dalki, the first revealed two Pds. Pd I was characterized by Upper Palaeolithic tools [4.4] represented by scrapers and Pd II by microliths of both geometric and non-geometric varieties. The second trench revealed only one cultural Pd associated with microlithic tools, both geometric and non-geometric. Besides a few Lower Palaeolithic [4.2] tools were found embedded on the surface of the first trench. Two Neolithic [4.6.5] celts and a polished roller had been previously found.

IAR 1959-60; 1966-7.

Lothal (22°31'; 72°15'), Dt Ahmadabad, a mound in village Saragwala sandwiched between the Sabarmati and the Bhogavo, 10 km up the Gulf of Cambay, though the distance might have been shorter in ancient times. The compact mound rising about 6 m from the present level of the surrounding land composed of the Black Cotton Soil [9.1] was discovered by S.R. Rao in 1954 and excavated by him on behalf of the ASI from

1954-5 to 1962-3 (*IAR* 1954-5, p. 12; 1955-6, p. 6; 1956-7, p. 15; 1957-8, p. 12; 1958-9, p. 13; 1959-60, p. 16; 1961-2, p. 9; 1962-3, p. 6). Surface indications that it was a site of the Harappa culture [4.9] have been amply borne out by the excavations.

The Harappans reached the site from Sind by sea along the rugged Kathiawad coast, though some think that an overland movement across Kathiawad was not an improbability, with such sites as SURKOTADA and DESALPUR in the Rann of Kutch marking the stages of the march. Lothal provided to the Harappans an outlet of the sea for the export of inland produces like cotton, ivory and objects of semiprecious stones.

When the Harappans arrived at the site it was, like RANGPUR farther inland, inhabited by a people using copper, short chalcedony blades and a micaceous red ware and black-and-red ware [11.16.1], though a distinct pre-Harappa level was not met with in the excavations. The shapes in the former ware were the round-bottomed jar and stud-handled bowl painted with plant motifs, horizontals, zigzags, loops and intersecting circles. The Harappans introduced their own characteristic pottery [11.3] but allowed the pre-existing wares to continue and adapted them to their own style.

The 7 m thick occupational debris has been divided by the excavator into two Pds, A and B, the first belonging to the mature Harappa culture and the second to a decadent stage thereof. Pd A has again been subdivided into four structural phases, I to IV, each phase separated from the preceding one by flood-borne deposits; Pd B is represented by a single Phase V. To meet the menace of floods which had destroyed Phase I, the people raised the structures of Phase II on massive mud-brick platforms, 1.2 to 3.6 m high, over which they laid a fresh township much more extensive than the preceding one and planned in the mature Harappa mode, with several blocks, streets and drains and an 'acropolis' with three blocks in the s. part, thus dividing the settlement into an upper and a lower town. While the structures were of mud brick, baked brick was used in bath-rooms and well-laid-out drains with manholes and soakage jars in the streets. The lower town provided accommodation for craftsmen—coppersmiths, goldsmiths, shell-workers and bead-makers, their shops and working-places marked by the remains of their craft. Thus, two coppersmiths had a brick-lined furnace, a cubical stone anvil, terracotta crucibles and copper implements; a bead factory had hundreds of carnelian beads in different stages of manufacture including finished ones and a circular kiln for the heating of the raw material. The technological skill of the people is attested by bronze drills of the auger type with twisted grooves, besides flanged ones, needles with eyelets at the piercing point or back end, a circular saw,

terracotta plumb-bobs, and ivory scale with an extant length of 12.8 cm, with 27 divisions, in a length of 4.6 cm, and angle-measuring instruments.

Unlike Harappa and Mohenjo-daro, the defensive or flood-resisting wall of Lothal did not enclose only the acropolis area but encompassed the lower city as well. The massive mud-wall, 300 m n.-s. and 400 m e.-w., was reinforced by baked-brick walls on the n. side. The city was extended beyond the s. wall in Phase III, when it was 2 km in circuit. But the plan of the city remained unchanged in phases III and IV, thanks to strict and authoritative vigilance.

The acropolis was trapezoid on plan, 117 m e.-w., 136 m on the n. and 111 m on the s. The main residence, of which no trace is left, stood on a 3.5 m high podium, 126 × 30 m, with three streets and three lanes, and had a brick-lined well and an elaborate drainage system attached to the baths. The small dwellings of the acropolis had 12 houses of uniform dimensions in a row with an equal number of baths connected through runnels with a sewer in the street. The main drain of the acropolis ran underground and discharged itself in the dock mentioned below.

Apart from the circuit wall encompassing the whole settlement, Lothal had two other notable features distinguishing it from other Indus cities—a dock and a warehouse. The former, a trapezoid baked-brick enclosure measuring on an average 214 × 36 m and flanking and running along practically the whole length of the e. city-wall, has been taken to be a dock to berth ships sailing into it at high tide through a 12 m wide gap in the n. flank; in the s. wall at the opposite end was a spill-way for excess water to escape and to lock water when necessary by a (wooden) shutter in the vertical grooves provided in the flanking walls. That it was a dock has been doubted by some (Shah, 1960, pp. 310-20; Leshnik, 1968, pp. 911-22; Pandya, 1977, the last disputing the identification on grounds of the sea-level not allowing the gravity flow of water into the structure). But no better identification is forthcoming, as in the absence of steps or ramps leading down to the enclosure with vertical walls it could not have been a reservoir to hold potable water.

The top of the city-wall flanking its e., wider here than elsewhere, has been taken to be a wharf or loading-platform, in the s.-w. corner of which was a curious structure regarded as a warehouse, standing on a 4 m high platform with floor-area of 1930 sq m, originally with 64 cubical mud-brick blocks, each 3.6 m square on plan and 1 m high, separated from each other by a 1 m wide passage. While merchandise for loading and unloading from the ships in the dock was piled on the blocks, the passages were meant to be air-vents. As many as 65 terracotta sealings recovered from the

warehouse bore impressions of Indus seals on the obverse and of packing material such as bamboo matting, reed, woven cloth and cord on the reverse. A substantial part of the warehouse was destroyed in Pd III and was never rebuilt.

All this elaborate infrastructure for external trade is amply reflected in other finds from Lothal. A circular steatite seal of the class known as Persian Gulf seals (Bibby, 1958, pp. 243-4; Wheeler, 1958, p. 246; Rao, 1963, p. 37), found abundantly at Failaka and Ras-al-Qa'la (Bahrain) on the Persian Gulf, is a surface find at Lothal, evidently the Persian Gulf sites were intermediary in the Indus trade with Mesopotamia. Conversely some of the Indus-like seals found in Mesopotamia may have been imports from Lothal. A bun-shaped copper ingot, weighing 1.438 kg follows the shape, size and weight of Susa ingots, with which the Lothal specimen shares the lack of arsenic in its composition. In addition to the Indus stone cubes of standard weights [6.29] Lothal had another series of weights conforming to the Heavy Assyrian standard for international trade. Cotton, an important produce of Gujarat, might have been an important item of export from Lothal. All this is addition to the other evidences of Indus maritime trade obtained from the Harappa centres of the Indus valley [4.9] such as 'reserved-slip ware', circular beads with axial tubes, etc. A terracotta male figure with a square-cut beard in the Sumerian style from Lothal as also the terracotta model of an Egyptian mummy tell their own tale. Lothal might also have been the intermediary station for the import to the Indus valley of gold from Kolar (Mysore) gold-fields, some semiprecious stones from the Deccan plateau and shell from the w. coast and in turn might have depended on the Indus valley of such items as copper and chert, their sources being nearer the Indus than Lothal. Typical Indus objects such as steatite disc, beads, long chert blades and flat copper celts of the lower Deccan Neolithic-Chalcolithic culture [4.6.9; 4.14.8] might have been introduced into that culture from Lothal.

All this must have taken place during phases II and III when the highest prosperity in the life of Lothal had been reached. In Phase IV which followed another flood the dock had to be rebuilt with walls of reduced thickness and due to the choking up of the original flow-channel a new and narrower channel of the river had to be excavated, which did not allow large vessels to enter the dock. The final destruction of the dock took place with a flood that ended the prosperity of the settlement.

Phases V, Pd B, saw the return of the people to Lothal, now impoverished and with no town-planning; they had to be satisfied with jerry-built houses with

mud-floors, reed-walls and thatched roofs. Access to the outside world being now barred, the true Harappa long blades, their raw material derived from Sind, gave place to shorter blades of locally available stones. The ceramics underwent changes for the worse. The transformation that these late Harappans of Lothal underwent was however not identical in all respects with that of Pd II B RANGPUR, indicating the loss of contact between the descendants of the Harappans and the rise of localization among the late Harappa cultures. Unlike RANGPUR Lothal ceased to be occupied thereafter.

The pottery of the mature Harappans of Lothal was by and large the distinctive Harappa pottery [11.3] but had its individual features as well. In addition to the micaceous red ware and black-and-red ware mentioned above which marked the earliest occupation of Lothal and which the Harappans adapted to their own taste, typical Harappa forms like the perforated jar, goblet, beaker, small-necked jar, large jar with S-profile—all of the characteristic sturdy ware, usually red but sometimes buffish—are in evidence at Lothal. A local type was the convex-sided bowl with or without handle. The paintings usually followed the Harappa style but an important innovation was the realistic and vigorous depiction of fauna associated with flora, in a few cases perhaps depicting folk-tales. Thus there is a scene with a deer standing between a bird and a tree below, the bird standing merrily and proudly but the deer looking back dejectedly having failed to quench its thirst from the jar. Another scene, in the midst of elaborate designs mostly Harappa in character, gives the story of the bird (here a flock of them with fish in their beaks) and the jackal with a fish lying in its front. Landscaping with birds and plants is a feature of this provincial style.

In Pd II some typical Harappa types such as the beaker and goblet disappeared and some were modified in shape, e.g. the bowl with carinated shoulder and ovoid jar with high neck evolved respectively from the convex-sided bowl and small-necked globular jar of the mature Harappa. The paintings were much less elaborate and were reduced to stylized animal and vegetal motifs and simplified loops and wavy lines, all lacking finer finish.

Seals of steatite and other material including terracotta found at Lothal follow the usual Indus model, with the unicorn and bull forming the majority of the animal motifs on them. There are also, as usual, seals without animal effigies but with engraved legends only. Copper seals with a loop-ring and sketchy motifs are also present.

Numerous varieties of semiprecious stones and faience [16.6] were used for the making of beads of varied shapes. Necklaces of microbeads of gold,

pendants with long tubes, hollow conical objects to decorate strands of hair on the forehead, conical looped foils for the ear and gold studs and pins and objects of shell, ivory and terracotta formed the personal ornaments.

Interesting is the occurrence of rice [2.2.3] at Lothal, as also of *Pennisetum typhoides* (*bajra*) [2.2.4]. A rotary quern, believed to be a much later innovation in the subcontinent, is an exclusive find (though its antiquity has been doubted, 6.19). The horse, among other animals, seems to have been known.

It seems that the religious beliefs of the Harappans differed from region to region. While bathing, perhaps ritualistic, formed an important practice in many, if not all, regions, including Lothal, the cult of the mother goddess [12.6] seems to have been unknown at Lothal, as at KALIBANGAN, while it was so popular at Mohenjo-daro and Harappa. There are however terracotta female figurines with well-proportioned limbs and applied breasts, but they do not seem to have any cultic value; so also composite figures of animal heads on human bodies and the bulls and unicorns on the Lothal seals. Phallus worship, said to have been practised at Harappa and Mohenjo-daro, is unknown at Lothal: the terracotta phallus-like objects may not be anything more than gamesmen, which may be their true identification at the Indus valley sites as well. On the other hand the practice of fire worship seems to have been a prevailing cult at Lothal, where a large number of houses in the lower town had rectangular or circular mud enclosures built into the floor or raised over low mud-brick platforms, some of them containing ash and terracotta cakes [6.27], a comparable cult having been identified at KALIBANGAN.

There were toys and gamespieces, some of the latter suggesting a game like chess. Figurines cast in bronze were confined to representations only of animals such as dogs, a crouching bull, a hare and a bird as the head of a pin.

The cemetery of Lothal lay to the n.-w. of the lower city beyond the peripheral wall. Twenty graves—each a rectangular n.-s. pit—were identified. The bodies were kept in an extended position, except three which had the bodies lying on the side. One of the graves contained two bodies, but in view of the difference among anthropologists whether one was a male and other a female, these graves being illustrative of the practice of *sati* would remain an open question. One of the skulls was trephined, either shortly before death or post-mortem. The graves were poorly furnished with pottery. One of them had bones of goat besides human remains and another a bovine jaw-bone. The graves belonged to Phase III, the earlier cemeteries remaining unidentified and the later one being washed away by

floods. Considering the limited number of burials it would appear that other methods of the disposal of the dead might have been in vogue.

The excavator's date for the mature Harappa culture, Pd I, of Lothal is from 2450 to 1900 B.C., and for the decadent phase, Pd II, 1900 to 1600 B.C. He would also like to place the advent of the Harappa culture in Gujarat at about the same time as its beginnings in the Indus valley. Three ^{14}C dates are available for Phase III B: 2010 ± 115 , 2005 ± 115 and 1995 ± 115 B.C. one for Phase IV A: 1895 ± 115 B.C.; and two for Phase V: 1865 ± 110 and 1800 ± 140 B.C. Another series of dates, two for Phase I— 2080 ± 135 and 1555 ± 135 B.C.—and one for Phase II— 1895 ± 115 B.C.—are dismissed by him as inconsistent. Agrawal and Kusumgar, 1974, p. 103, would on the other hand put the Harappa culture in the nuclear zone (Indus region) to 2300-2000 B.C. and in the peripheral zone (including Lothal) to 2220-1700 B.C. adding however that depending on the final consensus on the magnitude of $^{14}\text{C}/^{12}\text{C}$ variations the whole date-bracket might have to be pushed slightly backward in time. In view of the current tendency of placing the beginnings of the culture earlier than what was customary in the forties to the sixties Rao's dates may be taken as a good working hypothesis, though it must be added that the coevality of the beginnings of the culture in the Indus province and at Lothal is open to doubt; so also is a long duration of 300 years for the decadent phase thereof, Pd II, at Lothal.

Agrawal, D.P., & Kusumgar, S., 1974, *Prehistoric Chronology & Radiocarbon Dating in India*, New Delhi. Bibby, T.G. 1958, in *Antiquity*, 32, pp. 243-4 (for Persian Gulf seals). Leshnik, L., 1968, in *American Anthropologist*, 70, 5 (for Lothal dock). Pandya, S. 1977, in Agrawal, D.P., & Pande, B.M., ed., *Ecology & Arch. of w. India*, Delhi (for Lothal dock), Rao, S.R., 1963, in *Antiquity*, 37, pp. 96-9 (for Persian Gulf seal); 1962 & 1963, in *AI*, 18 & 19, pp. 178-81 (for summary of Lothal results); 1973, *Lothal & the Indus Civilization*, Bombay; 1979, *Lothal, a Harappa Port Town (1955-62)*, 1, Mem. ASI, 78 (not consulted). Shah, U.P., 1960, in *Jour. Oriental Inst. Baroda*, 9 (for Lothal dock). Wheeler, M., 1958, in *Antiquity*, 32 (for Persian Gulf seal); 1968, *Indus Civilization*, Cambridge, pp. 64-5 (for summary of and observations on Lothal)—A. GHOSH

Lovika-ka-Tapa, Dt Ballia. Black-and-red ware (of unspecified nature).

IAI 1963-4.

Lower Dutta-Buldi, Dt Parbhani. Late Stone Age (Mesolithic [4.5]) site.

IAI 1970-1.

Loy, Dt Dhule. Microliths associated with ochre-coloured pottery. See DHAMDAI.

IAI 1957-8.

Luhiga Kalan, Dt Gurgaon. Late Harappa [4.10] site.

Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.

Luhinga, Dt Gurgaon. Pre-Harappa [4.8] site.

Suraj Bhan, 1976, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra.

Lukhela, Dt Rajkot. Harappa [4.9] site near Vasawad.

See DUMIANA.

IAR 1958-9.

Lukhi, Dt Ambala. PGW [11.14] site.

IAR 1955-6.

the Gulf of Kutch with blades and flakes.

IAR 1955-6.

Lupungdi, Dt Ranchi. Burial site indicated by grass.

M

Machad ($10^{\circ}12'$; $76^{\circ}12'$), Dt Trichur, in Manalithara village, with five Megalithic monuments [4.17.11], of which four are cist circles and one an urn burial, each indicated by circles of undressed laterite blocks of various sizes and shapes. One of the cist circles, with a diameter of 9 m but with the capstone missing, and the urn burial were excavated by the M.S. Univ. Baroda in 1974. Fronted by an antechamber of smaller orthostats, but with no capstone or floor, the four orthostats of the main cist arranged in a *svastika* pattern vary in length from 1 to 2.90 m and in height from 1.75 to 2.35 m, the one having a circular hole closed from the antechamber side by a small flat slab. The main cist is 2.80 m long e.-w., 2 m wide and 2.1 m deep. The cist is horizontally bisected at a depth of 90 cm by a slab supported by two vertical ones, thus dividing the lower part of the cist into three small cells, all sharing a horizontal floor slab. These cells contain pottery, iron objects, bones and beads.

The urn burial, with a small stone circle around it, has an outer diameter of 2.6 m and an inner one of 2.4 m. Below the surface is a circular granite stone under which was a broken pot kept on a stone slab resting on the mouth of a large urn with pottery, beads and iron objects, both inside and outside it.

The pottery represented in the cist and urn burial consists of the bowl, dish and lid and large and small vase, all of the Black-and-red Ware [11.16.3], besides red and black wares found in the filling of the megalith. Iron is represented by daggers, chisels with double-edged blades, hooks, nails and a nail-like object, at this site as well as at PAZHAYANNUR. Many of the objects appear to have been made of thin sheets of metal repeatedly welded and forged together. The metal is almost pure with traces of manganese, cobalt and aluminium. The beads are variously made of etched and unetched carnelian, felspar, agate, jasper and crystal and are of miscellaneous shapes.

While transeptic cists with antechambers are known in the Pudukkottai region of Tamil Nadu, this is the first discovery of such cists in Kerala, albeit with variations. Their construction is very similar to those at PAZHAYANNUR, 40 km away.

Mehta, R.N., & George, K.M., 1978 *Megaliths at Machad & Pazhayannur, Talpally Taluka, Trichur Dt, Kerala State, Vadodara*.

—A. GHOSH

Machakhur ($16^{\circ}15'$; $75^{\circ}25'$), Dt Bijapur. Lower and Middle Palaeolithic [4.2, 3] site. See GHATAPRABHA VALLEY.

Machharai, Dt Gurdaspur. Early historical [4.19.1] remain. See ACHAL-SAHEB.

IAR 1961-2.

Machharala, Dt Gurdaspur. Early historical [4.19.1] remains. See ACHAL-SAHEB.

IAR 1961-2.

Machcharihawa, Dt Allahabad. Early Stone Age (Lower Palaeolithic [4.2]) factory site.

IAR 1969-70.

Machiala-Mota ($21^{\circ}41'$; $71^{\circ}14'$), Dt Amreli. Lustrous Red Ware [11.9] site.

AI, 18 & 19, 1962 & 1963, p. 206.

Machi Kunda valley, Dt E. Nimar. Lower, Middle and Upper Palaeolithic [4.2-4] tools.

IAR 1959-60.

Machiyani, Dt Varanasi. Early historical site [4.19.1] with black-and-red ware [11.6.3].

IAR 1962-3.

Machlivar, Dt Jamnagar. Site with Red Polished Ware [11.23].

IAR 1957-8.

Machnur, Dt Raichur. Prehistoric site (of unspecified nature).

AR Hyderabad Arch. Dept, 1935-6, p. 2.

Madagi, Dt Bijapur. Site with Lower Palaeolithic [4.2] tools.

Foote, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Madakhora, Dt Ganganagar, RANG MAHAL [11.24] site in SARASVATI VALLEY.

Unpublished.

Madakkulam, Dt Madurai. Megalithic [4.17.8] habitation site.

IAR 1956-7.

Madalmatti, Dt Bijapur. Megalithic [4.17.8] site.

Progress Rep. Kannada Res. Inst., 1941-6, p. 23. Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 26-30.

Madanapalle, Dt Chittoor. Dolmens [4.18.7] on the hillocks called Basinikonda and Madankonda near Madanapalle.

IAR 1962-3.

Madanpur, Dt Deoria. Mound yielding sherds of the PGW (? [11.14]), NBPW [11.16], terracotta figurines

and an antimony rod [18.1].

IAR 1969-70.

Madapur, Dt Dharwar. Chalcolithic [4.14.8] site with thick coarse grey ware similar to that of BRAHMAGIRI. Also early historical [4.19.11] site. See HANDIGNUR.

IAR 1958-9.

Madara, Dt Varanasi. Black-and-red ware (of unspecified nature).

IAR 1962-3.

Madaraha, Dt Gorakhpur. NBPW [11.16] and black-and-red ware (of unspecified nature) site.

IAR 1963-4.

Madarapakam, **Madarapuancum**, Dt Chingleput. Lower Palaeolithic [4.2] site on the Naranavaram.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras, p. 149. Foote, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 172.

Madbhal, Dt Bijapur. Thick coarse grey ware with ribbon flakes [16.15.2] of chert.

IAR 1958-9.

Maddur, Dt Mysore. Megalithic [4.17.8] habitation site.

Information from C. Krishnamurthy through A. Sundara.

Madeva, (21°50', 71°24'), Dt Amreli. Late Harappa [4.10] site corresponding to RANGPUR II B and II C.

AI, 18 & 19, 1962 & 1963, p. 206.

Madhapar, Dt Kutch. Mesolithic [4.5] and historical site (of unspecified nature).

IAR 1970-1.

Madhavaram, Dt Kurnool. Late Stone Age (Mesolithic [4.5]) site.

IAR 1964-5.

Madhi¹, (21°45', 70°50'), Dt Amreli. Lustrous Red Ware [11.9] site corresponding to RANGPUR II C and III.

AI, 18 & 19, 1962 & 1963, p. 206.

Madhi², Dt Rajkot. Early historical [4.18.1] site near Sultanpur.

IAR 1958-9.

Madhi³, Dt Surat. Mesolithic [4.5] site in the Gabhani valley.

IAR 1968-9.

Madhopur, Dt Jullundur. Harappa Ware [11.6.1] and PGW [11.14] sherds were found at the site 24 km to the s.-w. of Jullundur.

IAR 1956-7.

Madho Singhana, (29°25', 74°58'), Dt Hissar. Two RANG MAHAL sites [11.24] in the vicinity of Madho Singhana.

IAR 1966-7; 1967-8.

Madhuban, Dt Santal Parganas. Microliths (of an unspecified nature).

IAR 1963-4.

Madhupur, Dt Mayurbhanj. Neolithic [4.6.7] site.

IAR 1958-9.

Madhvas, Dt Panch Mahals. Late Stone Age (Mesolithic [4.5]) site.

IAR 1971-2.

Madiala-Kalan, Dt Ludhiana. Harappa [4.9] site.

IAR 1963-4. Suraj Bhan, 1975, *Excavation at Mitaihal & Other Explorations in the Sutlej-Yamuna Divide*, p. 122.

Madina, Dt Rohtak. Madina-I (Kheda) yielded late Harappa [4.10] material while Madina-II yielded PGW [4.14], Black-slipped Ware [11.13] and early historical [4.18.1] material.

Jour. Haryana Studies, 3, 1, p. 4.

Madippanur, Dt Madurai. Urn burials [4.17.9].

IAR 1958-9.

Madiyanallur, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 1, 1, pp. 515-8.

Madnahalli, Dt Bijapur. Megalithic [4.17.8] site with two stone circles.

IAR 1960-1. Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, p. 92.

Madnapur, Dt Shahjahanpur. A hoard of nine shouldered celts and a flat celt of copper [4.11].

Information from S. Asthana.

Madrak, Dt Aligarh. Site with grey ware.

IAR 1966-7.

Madwas, Dt Panch Mahals. Microlithic (of unspecified nature) site.

Sonawane, V.H., 1976, in *Arch. Congress & Seminar, 1972*, Kurukshetra.

Magandiwana, Dt Mirzapur. Megaliths [4.17.4] were located to the e. of the hillock of Magandiwana, at a distance of about 5 km from Ahraura.

IAR 1961-2.

Magaur, Dt Varanasi. Black-and-red ware (of unspecified nature) and NBPW [11.16].

IAR 1965-6.

Magathevanpatti, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 2, 1, p. 93.

Maghar, Dt Basti. Black-and-red ware (of unspecified nature).

IAR 1963-4.

Magjhar, Dt Durg. Megalithic [4.17.6] site.

IAR 1972-3.

Mah, Dt Kathua. Terrace 3 of the Ravi yielded pebble tools and flakes.

IAR 1965-6.

Mahad, Dt S. Konkan. Lower Palaeolithic [4.2] site. See KANDIVLI.

Guzder, S.J., 1977, in *Man & Environment*, 1, p. 1.

Mahada-ka-Kot, Dt Jaunpur. NBPW [4.2] site.

IAR 1963-4.

Mahadaria, Dt Mirzapur. Rock-shelter with paintings [13].

Misra, V.D., *Some Aspects of Indian Arch.*, Allahabad, p. 27.

Mahadeoghat, Dt Mandsaur. A series of ring-wells [14.15] were noticed on the mound opposite that Mahadeoghat on the bank of the Shivna. The mound yielded pottery and other antiquities of the historical period.

IAR 1961-2.

Mahadeo Piparia (23°06'; 79°16'), Dt Narsinghpur. Excavation on the left bank of the Narmada yielded Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3]) tools. The stratigraphy was as follows (from top downwards): (i) light-yellow brownish silt; (ii) cross-bedded sandy deposit with number of intercalations of very fine sand and silt yielding Middle Stone Age (Middle Palaeolithic [4.3]) tools; (iii) disconformity; (iv) red-brown silt; (v) a lens of boulder-gravel yielding a flake with flake scars; (vi) yellow-brown hard kankary silt; (vii) yellow-brown sandy silt; (viii) boulder conglomerate yielding (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) tools. See NARMADA VALLEY.

IAR 1962-3; 1964-5. Sankalita, H.D., 1974, *Prehistory & Proto-history of India & Pakistan*, Poona, pp. 14-6.

Mahadeo-Raja-ka-Kila, Dt Jaunpur. Mound on the n. bank of the Gomati yielding sherds of Black-slipped Ware [11.13], NBPW [11.14], grey and red wares, microlithic core, glass bangle pieces and a terracotta disc.

IAR 1966-7.

Mahadeva, Dt Gorakhpur. Black-and-red ware (of unspecified nature).

IAR 1963-4.

Mahadevapura, Dt Chitradurga. Early historical [4.18.11] site.

Information from A. Sundara.

Mahadevayo, Dt Bhavnagar. Harappa Ware [11.3] and coarse corrugated ware were found in the Kalubhar valley.

IAR 1960-1.

Mahadev-no-Timbo, Dt Banas-Kantha. Microliths (of unspecified nature) and painted red and late historical red wares.

IAR 1964-5.

Mahagaon¹, Dt Gulbarga. Megalithic [4.17.8] site.

AR Hyderabad Arch. Dept., 1934-5, p. 7.

Mahagaon², Dt Nanded. Middle Palaeolithic [4.3] site.

IAR 1964-5.

Mahagaon³, Dt Pune. Microlithic (of unspecified nature) site.

IAR 1959-60.

Mahagaon-Budruk, Dt Chanda. Site with Early Stone Age (Lower Palaeolithic [4.2]) and microlithic (of unspecified nature) tools.

IAR 1961-2.

Mahagara, See 4.6.3.

Mahaisal, Dt Sangli. Tools of Middle (Middle Palaeolithic [4.3]) and Late Stone (Mesolithic [4.5]) Ages.

IAR 1962-3.

Mahajari, Dt Nagpur. Same as MAHURJHARI.

IAR 1958-9.

Mahakalikudi, Dt Tiruchchirappalli. Early historical [4.18.12] site.

IAR 1965-6.

Mahal¹, Dt Jaunpur. Site on the s. bank of the Gomati yielding sherds of fine grey ware, Black-slipped Ware [11.13], NBPW [11.16] and red ware.

IAR 1962-3; 1966-7.

Mahal², Dt Surat. Lower [4.2] and Middle Palaeolithic [4.3] and Mesolithic [4.5] site.

IAR 1967-8.

Mahalgao, Dt Chanda. Lower Palaeolithic [4.2] site.

IAR 1960-1.

Mahalinganakalle, Dt Mysore. Megalithic cist burials [4.17.8].

IAR 1961-2.

Mahalkheri, Dt E. Nimar. Tools of Series I and II (Lower and Middle Palaeolithic [4.2, 3]) and microliths (of unspecified nature).

IAR 1960-1.

Mahamdagarh, Dt Saran. Traces of a defence wall and moat were found besides sherds of the NBPW [11.16] and associated red ware.

IAR 1961-2.

Mahanad, Dt Hooghly. Trial excavation brought to light pottery and stucco heads of the style of the 5th-6th century.

IAR—AR 1934-5.

Maharajganj, Dt Saran. NBPW [11.6] site.

IAR 1965-6.

Maharganj, Dt Saran. Terracotta ring wells [14.15].

IAR 1962-3.

Maharia, Dt Mirzapur. Painted rock-shelters [13].

Ghosh, M., 1932, *Rock Paintings & Other Antiquities*, ASI, 24.

Maharpatane, Dt Nasik. Middle (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) site.

IAR 1965-6.

Mahaua-Kachchha, Dt Allahabad. Lower [4.2] and Upper Palaeolithic [4.4] factory site on Rangarhwa hillock.

IAR 1969-70. Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad, p. 37.

Mahudih, Dt Palamau. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1971-2.

Mahauwan, Dt Mirzapur. Black-and-red ware (of unspecified nature) and NBPW [11.16].

IAR 1962-3.

Mahawa, Dt Aligarh. Black-slipped Ware [11.13] and medieval ware.

IAR 1966-7.

Mahenduri, Dt Ahmadnagar. Black-and-red pottery of the early historical period was found on a mound on the Pravara at Mahenduri, 7 km to the w. of Akola. Another mound further w. yielded black-and-red ware with graffiti [20.1] in shapes resembling those of TEKWADA Pd I B. See PRAVARA VALLEY.

IAR 1959-60.

Maheshpur, Dt Saharanpur. PGW [11.14] site.

IAR 1965-6.

Maheshpura, Dt Lalitpur. Palaeolithic (of an unspecified nature) site.

IAR 1963-4.

Maheshwar and Navdatoli, (22°11'; 75°36'), Dt W. Nimar, twin sites on the n. and s. banks of the Narmada respectively. Maheshwar lies on a slight bend of the river at the junction of the Narmada with the Maheshwari and has been usually identified with the ancient city of Mahishmati. Early Buddhist literature mentions that Mahishmati was the capital of Avanti and lay on the highway from PAITHAN to UJJAIN. Inscriptions at Sanchi record donations made by the inhabitants of Mahishmati and the Purāṇas and the epics refer to its association with the Haihayas. The city continues to find mention in classical, Sanskrit literature and inscriptions which testify to the prosperity of the place right down to Akbar's times. Navdatoli, on the other hand, seems to have no such claims to literary antiquity. A thin layer of sand and gravel suggests that towards the beginning of the Christian era the site was almost wiped off by a flood; hence the silence about it in later writings. Preliminary exploration in 1950 showed a profusion of painted pottery and microliths at the site. In order to ascertain the antiquity of these two sites are revealed by painted pottery and persistent literary tradition, an expedition was organized including the Univs. of Baroda, Bombay and Poona under H.D. Sankalia in 1952-3. Encouraged by the results Navdatoli was taken up for horizontal excavation again in 1957-9. These digs fulfilled their main objective and revealed a broad sequence of cultures from the Lower Palaeolithic [4.2] to the 18th century divided into seven Pds.

Pd I, Lower Palaeolithic. A detailed survey between Sahasradhara and Mandaleswar yielded over 400 Palaeolithic tools [4.2]. Typologically and stratigraphically these are identical to those grouped by de Terra and Paterson, 1939, in the 'Lower' and 'Upper Narbada' group.

Pd II, Middle Palaeolithic. A few large cores were found in the virgin soil at Maheshwar. These, together with the flake blades, scrapers, burins and borers or points found at a number of localities in the vicinity of Maheshwar and Navdatoli, characterize the Middle Palaeolithic [4.3] industry of the region. Detailed studies carried out in 1957-8 show that these tools are found in the basal gravels of the lower terrace of the NARMADA belonging to the third aggradational phase. Typologically the industry is similar to that from NEVASA. It shows a distinct use of the Levallois technique [16.15.1], the presence of varieties of scrapers and the existence of angle burins and double hollow scrapers with incipient points sometimes giving them the character of borers.

Pd III, Chalcolithic. This Pd [4.14.5] is well documented at both Maheshwar (Mound V) and

Navdatoli, though a greater part of the evidence is based on the horizontal excavation at the latter site. This shows that the Chalcolithic settlement took place on the virgin Black Soil [9.1]. On the basis of pottery types and fabrics it is divisible into four phases. Thus, Phase I is marked by the occurrence of a painted black-and-red ware [11.6.2], the cream-slipped ware and its variants along with the predominant Malwa Ware [11.10]. Of these the black-and-red ware disappears in Phase II. The end of this phase is marked by widespread destruction by fire and the subsequent Phase III shows a cessation of the cream-slipped ware and the introduction of the Jorwe Ware [11.11] together with a few sherds of the Lustrous Red Ware [11.9]. These continue into Phase IV, in the upper levels of which storage jars are found with applied decoration. At Maheshwar, the top layers of the Chalcolithic have yielded the black-and-red ware which continues into the early historical period [4.18.7]. The predominant ware throughout the occupation of the sites however is the Malwa Ware. It is a buff or orange-slipped ware decorated with designs in black or dark-brown. The designs are either geometric or naturalistic, among the latter animals and birds being prominent. The typical shapes are the *lotā*, bowl with concave sides, channel-spouted cups and pedestalled goblets. Of these, goblets have been found only at Navdatoli and not at the other Malwa culture sites. (According to Wakankar, 1976, the Kayatha Ware [11.7] occurs at Maheshwar.)

House-plans revealed in the excavations show that the structures were either circular or rectangular on plan, the average dimensions of the former being 3 m in diameter and that of the latter 3.50 × 2.50 m. Wooden posts supported the roof and walls were made of a split bamboo screen plastered with mud. Inside the houses one- or two-mouthed *chulhās* and storage jars were found.

Charred grains of wheat (*Triticum vulgare cum-pactum*), rice (*Oryza sativa* L.), legumes, oil-seeds and seeds of fruit [2] suggest agriculture as the means of subsistence, though bones of both domestic and wild animals have also been found in large numbers [1]. These show the consumption of beef, pork and venison.

Interesting evidence regarding the religion of the people is provided by a storage jar belonging to Phase IV at Navdatoli. This jar is decorated with applied figurines of a female and a lizard with what looks like a shrine between the two. It has been suggested by Dhavalikar, 1979, p. 241, that the shrine is that of a deity associated with a lizard or alligator. The prevalence of fire-worship is also inferred on the basis of pits found at Navdatoli and identified as *kundās*. A channel-spouted bowl from the same site has the representation

of a human figure with dishevelled hair and was perhaps used for ritualistic purposes.

Metallurgical analysis has shown that a low-tin bronze was used in this Pd, the typology of the objects being similar to that from other Chalcolithic sites. These include chisels, celts, arrowheads, nails and fish-hooks. An important piece is a fragment of a dagger or sword with a raised mid-rib on both sides. This unusual feature shows affinities with the weapons from w. Asia, the Copper Hoards [4.11] and KALLUR.

Ornaments include beads, pendants, ear-studs, bangles and rings in diverse materials such as copper, terracotta, semiprecious stones and shell. Lithic blades and geometric microliths such as lunates and trapezes form an integral part of the cultural equipment of this Pd. Made primarily on chalcedony, these stone implements were manufactured individually by each household. Stone was also used for mace-heads, balls, hammer-stones, querns and pestles [6.19]. Another material widely used was clay as evidenced by the find of terracotta discs [6.7.3], skin-rubbers [18.4], lamps [6.11], wheels, toys and whorls [6.25].

On the basis of certain pottery shapes like the channel-spouted bowl and pedestalled goblet and other antiquities such as the mid-ribbed sword, the excavators suggest contacts between Navdatoli and w. Asia during this Pd.

A number of ^{14}C dates are available. These are: 1610 ± 130 B.C.; 1645 ± 130 B.C.; 1660 ± 130 B.C.; 1600 ± 130 B.C.; 1440 ± 130 B.C.; 1660 ± 70 B.C.; 2300 ± 70 B.C.; and 1530 ± 110 B.C. Ignoring the erratic figure of 2300 ± 70 B.C. the Chalcolithic settlement at these two sites has been placed between 1500 and 1200 B.C.

Pd IV, early historical. The evidence from Navdatoli suggests that at the end of Pd III a great flood occurred causing the site to be temporarily abandoned. The NBPW [11.16] forms the distinctive pottery of Pd IV together with the black-and-red, burnished red, coarse red and the red-slipped wares. The NBPW reveals a wide variety, certain features being quite new. The slip, for instance, varies in lustre and colour from steel-blue, silvery, lustrous gold-blue to shining brownish-black. The core, though grey in most cases, also shows variations. The sherds are however too fragmentary to give any indication of the shapes.

This phase of occupation shows the use of small huts with wooden posts and floors made of fine clay and lime though a number of foundation walls of well-set river pebbles have also been exposed. The most important relics of this Pd, however, come from Mound III at Navdatoli and comprise a *stūpa* and a small rectangular brick structure. The *stūpa* was apparently left incomplete. It is constructed of large brick measuring $50 \times 27.5 \times 7.5$ cm and is 25.8 m in diameter with a

circumambulatory passage all around. The most surprising feature is the absence of a foundation trench. An NBPW sherd found below the mud platform of the *stūpa* and bricks having single Brāhmī letters of the Aśoka type indicate the 3rd century B.C. as its probable date. It is interesting that *stūpas* of the same Pd have also been excavated at KASARAVAD, about 6.4 km s.-e. of Navdatoli.

Excavations at Maheshwar show an e.ward extension of the settlement during this Pd.

The cultural equipment from these sites indicates the use of: terracotta stoppers, pottery discs, skin-rubbers [18.4] and toys; beads of semiprecious stones, shell and steatite; copper objects like rods, wire, antimony rods [18.1] and needles; iron arrowheads and a unique hoe; monochrome glass bangles; and bone points, antimony rods and bangles. A glass seal made of a squarish piece of black glass with an elephant impression was also found.

On the basis of uninscribed cast, punch-marked and tribal coins (Ujjayini) [3.1] found in this Pd, it has been dated between 400 and 100 B.C. At the end of this Pd occupation came to an end at Navdatoli.

Pd V, early historical. This Pd marks a transition between the NBPW and the Red Polished Ware [11.23] and is based on the evidence from the Mandalkho mound at Maheshwar. It is characterized by a decrease in the black-and-red ware, though the burnished red and the coarse red wares continue. As this Pd marks a transitional phase it has been dated between 100 B.C. and A.D. 100.

Pd VI, early historical. This Pd is characterized by an increase in the use of clay vessels and the introduction of the Red Polished Ware. Other ceramic industries include the black-and-red, coarse black, black-slipped, coarse red and tan wares. Of these the coarse black ware seems to have been used primarily for cooking as shapes like the frying-pan and saucer with blackened bottoms indicate. The Red Polished Ware has been extensively found in w. India, invariably associated with either Kṣatrapa or the late Śātavāhana level. It is made of an extremely fine levigated clay and is burnt uniformly to a brick-red colour. In fabric this Ware closely resembles the Roman Samian ware and other red wares of the e. Mediterranean region. Maheshwar shows another technological similarity between the two wares: certain sherds bear unmistakable evidence of having been moulded. The typical shape in this Ware is the sprinkler.

This Pd also marks the most active phase of construction at Maheshwar. Mound I has yielded remains of a brick platform of two courses with a cistern oriented s.-w. to n.-e. and crude pebble wall running n.-s. The bricks measure $37.5 \times 25 \times 7.5$ cm. In the top layers

fragments of moulded bricks have been found, but the exact nature of the structure could not be determined. Several fragmentary tiles imply the existence of tiled roofs, the tiles being fixed to the rafters with iron nails.

A group of six fragmentary headless terracotta figurines have been found at Maheshwar. Of these three are like the mother-and-child figurines earlier recovered from AHICCHATRĀ. Terracotta toys are characterized by a coating of lime and are sometimes painted in red ochre.

Noteworthy among the copper objects is a dagger pendant and a hair-pin, the latter also found at Taxila in the Śaka-Parthian levels. Other antiquities include: iron objects like arrowheads, spearheads, nails, sickles, chisels, and knives; monochrome glass bangles; bone points; shell bangles; and beads of semiprecious stones, terracotta and shell. Of great interest are two stone plaques with crude images of Gaṇeśa.

On the basis of the Red Polished Ware, this Pd has been dated between A.D. 100 and 500.

Pd VII, Muslim-Maratha. Though literary and archaeological data show a continuous occupation of Maheshwar, the evidence from excavations indicates an abandonment of certain areas and there are no material records of the Paramāra and other post-Harṣa periods, nor also of the early Muslim occupation. The top layers however have yielded definite evidence of Islamic glazed pottery and other medieval antiquities.

de Terra, H., and Paterson, T.T., 1939, *Studies on the Ice Age in India & Associated Human Cultures*, Washington. Dhavalikar, M.K., 1979, in Agrawal, D.P., & Chakrabarti, D.K., ed., *Essays in Indian Prehistory*, Delhi. Sankalia, H.D., Subbarao, B., & Deo, S.B., 1958, *Excavations at Maheshwar & Navdatoli 1952-53*, Poona-Baroda. Sankalia, H.D., Deo, S.B., & Ansari, Z.D., 1971, *Chalcolithic Navdatoli the Excavations at Navdatoli 1957-59*, Poona-Baroda. Sankalia, H.D., 1974, *Prehistory & Protohistory of India & Pakistan*, Poona. Wakankar, V.S., 1976, in *Arch. Congress & Seminar, 1972, Kurukshetra*—H.P. RAY

Mahespur, Dt Mirzapur. Megalithic [4.17.3] site.

IAR 1969-70.

Mahika, Dt Rajkot. Structural remains of the Kṣatrapa period.

IAR 1972-3.

Mahipura, Dt Saharanpur. OCW [11.5] site.

IAR 1967-8.

Mahisdal (23°42'; 87°42'), Dt Birbhum, on the left bank of the Kopai. Excavation in 1964 (IAR 1963-4, p. 59) established two cultural Pds. Pd I representing a Chalcolithic culture [4.14.4] has as its equipments all the essential elements such as microliths, a very limited supply of copper and the Black-and-Red ware [11.6.5], both plain and painted, the other ceramics including a red ware with paintings in black or white. Of the types the channel-spouted bowl, carinated bowl with splayed or flared rim and convex-sided bowl are the most distinctive. The designs are essentially linear on the black-

and-red ware while those on the red ware consist of the double axe, strokes like the inverted comma and horizontal lines in groups. Although no house-plan is available, two structural phases have been identified by two levels of floors of beaten earth with a soling of terracotta nodules. The presence of burnt-reed impressed clay daubs and mud plaster indicates that the inhabitants lived in simple mud-plastered structures. An impressive find is a pit granary destroyed by fire. The carbonized-rice grains [2.2.3] recovered in bulk from inside the granary as well as from the floor are of a slender variety corresponding to the modern fine grains. While copper is scarce stone and bone implements are quite prolific and are local products. The microliths include scrapers, points, lunates and short blades, the last being predominant. The technique of crested guiding ridge [15.15.2], characteristic of the c. Indian Chalcolithic blade industry, is absent. The restricted use of copper, represented by a single celt, may be due to the non-availability of the material in the immediate vicinity. The presence of beads of steatite and semiprecious stones, bangle pieces, decorated combs [18.3] and terracotta gamesmen [6.7.2] indicates the personal decoration and recreation of the people. Among other finds a terracotta phallus is very significant for the religion of the people. Thus flourished a sedentary peasantry practising mixed economy with an efficient system of food production supplemented by hunting and fishing. Their ceramic industries and some of the painted designs on pots showing a close affinity with the Chalcolithic cultures in c. India [4.14.5], the Deccan [4.14.6] and e. Rajasthan [4.14.1] as also with the Copper Age strata of PANDU RAJA DHIBI suggest a life based on mutual contacts and interrelationships with other people. The ¹⁴C dates are 855 ± 100, 1085 ± 110 and 1380 ± 105 B.C. A large-scale conflagration brought about the end of the Pd.

Pd II which commenced without any break is characterized by the presence of iron from the very beginning, though the earlier cultural traditions largely continue. Microlithic tools, lunates being more common, are used side by side with iron tools. Finished objects of iron such as arrowheads, spearheads, chisels as well as large quantities of iron ore testify to the metallurgical attainment of the people. Copper is also represented by a fish-hook, bangle pieces and rings; copper slag [16.9.4] is also available. The ceramic tradition of the earlier period continues but the fabric becomes coarser. The paintings are executed in black pigment on red and on black-slipped [11.13] wares. The designs consist of rows of vertical short wavy lines in groups and smudgy strokes within grooved horizontal lines. A new feature is the occurrence of grey ware with typical shapes bearing close similarity to those of the

PGW [11.14]. Clay daubs testify to the continued mode of house building of the iron-using people. This Pd also ended in conflagration. It is dated to c. 750 B.C. by ¹⁴C method.

While Pd II marks the beginning of the Iron Age in W. Bengal, the cultural assemblage showing an apparent continuity of the earlier tradition indicates that the pattern of life remained unaffected by the advent of the new technology. There is also no change in the objects of daily use. The only noticeable feature is an unburnt clay seal with indeterminate symbols on the obverse and impression of cross strings on the reverse. Evidently it suggests trade and commercial contacts with other people.

—S.K. MUKHERJEE

Mahisgaon, Dt Ahmadnagar. Microliths possibly of Chalcolithic [4.14.6] association and early historical [4.18.9] pottery.

IAI 1960-1.

Mahmadpur-no-Timbo, Dt Sabar-Kantha. Early historical site [4.18.2].

IAI 1967-8.

Mahmudpur-Sikera, Dt Meerut. Red Ware of Śuṅga-Kushan assemblage and medieval ware.

IAI 1962-3.

Mahnydih, Dt Allahabad. Site with NBPW [11.16] and fragments of Gupta terracottas.

IAI 1958-9.

Maho, Dt Aligarh. PGW [11.14], Black-slipped Ware [11.13], red ware of the Śuṅga-Kushan period and medieval ware.

IAI 1966-7.

Mahrudih, **Mahrudiha**, Dt Allahabad. Late Stone Age (Mesolithic [4.5]) site. See GANGA VALLEY.

IAI 1969-70.

Mahu, Dt Ujjain. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAI 1971-2.

Mahua, Dt Guna. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAI 1961-2.

Mahuar, Dt Agra. The site on the way to Fatehpur Sikri from Agra, 19 km from the latter, yielded PGW [11.14] and NBPW [11.61.1] sherds and large-sized bricks with finger marks.

IAI 1955-6.

Mahudi, Dt Mahesana. Crude black-and-red ware of the early centuries of the Christian era was found on the banks of the Sabarmati.

IAI 1964-5.

Mahulbana, Dt Purulia. Microliths (of unspecified nature).

IAI 1959-60.

Mahuli, Dt Allahabad. Microlithic [4.5] site. See TUNDIARA VALLEY.

IAI 1968-9.

Mahuli, Dt Satara. Early, Middle (Lower, Middle Palaeolithic [4.2, 3]) and Late Stone Age (Mesolithic [4.5]) site.

IAI 1962-3.

Mahulia, Dt Mayurbhanj. Series I (Lower Palaeolithic [4.2]) site on the Burhabalang.

IAI 1957-8.

Mahunji Pada, Dt Dhule. Late Stone Age (Mesolithic [4.5]) tools were found in the red sand and fine gravel on the Buray.

IAI 1966-7.

Mahur, Dt Nanded. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAI 1970-1.

Mahurjhari 92°14'; 79°30'), Dt Nagpur, 15 km w. of Nagpur on Nagpur-Katol road, with a number of Megalithic stone circles [4.17.6] of different dimensions. It lies exactly opposite the classic site of JUNAPANI which has probably the largest number of stone circles in India. In a sense Mahurjhari can be taken to be virtually the continuation of JUNAPANI now separated by a road which has artificially divided the Megalithic field and in the process destroyed some stone circles. The site was first noted by G.A.P. Hunter in 1933, when he also published a detailed account of the antiquities recovered at the site in the Annual of the Sāradaśrama, an institution located at Yeotmal in Vidarbha. However the antiquities reported by him are essentially of the early historical period having no relation with the stone circles there. They comprise seals [3.2] and intaglios [10.3], baked bricks of the size of 41 to 43 × 25 to 27 × 7.6 to 8.8 cm assigned by him to the Gupta period, a seal reading *apumūda* or *apramūda*, an intaglio in Vākātaka characters, another seal in red sandstone which, he thought, is 'an exact replica of the Proto-Elamite seal', a third seal in rock crystal and a fourth referred to as 'a Nāga seal', in addition to an abundant number of beads of semiprecious stones like agate, carnelian, quartz, rock-crystal, glass, turquoise, garnet, jade, jasper, etc. Hunter further observed that Mahurjhari must have been a bead-making centre and that the beads produced here were probably exported to c. Asia where, according to him, similar beads have been found at Buddhist sites. Hunter also drew attention to the headless female sculpture known as *nagna-kubandha*, a fertility symbol very common in early historical India. Mahurjhari continued to yield antiquities of the historical period even in subsequent times. In 1971 a terracotta seal bearing the name *Mādhavarāja* in a script assignable to the Gupta-Vākātaka period and a copper-plate grant of Pravarasena II of the Vākātaka dynasty were found. The plates issued in the 17th regnal year of the king do not mention either Mahurjhari or any place adjacent to it.

It is surprising that Hunter completely ignored the stone circles and equally surprising is the fact that Rivett-Carnac who had reported 'the barrows' of adjacent JUNAPANI as early as 1879 did not take notice of the stone circles at Mahurjhari. Rivett-Carnac published a variety of iron objects at JUNAPANI comprising tools and weapons as also horse bits [16.1], brooches and buckles—essentially a Megalithic kit. In 1961-2 the ASI excavated a few stone circles at JANAPANI without reference to Mahurjhari (*IAR* 1961-2, p. 32).

In 1970-2 the Nagpur University Dept of Ancient Indian History, Culture and Arch. carried out excavations of 14 stone circles at Mahurjhari distributed in four different sections or localities, some on hillocks, some near a perennial stream, some in an isolated sector and some close to the present-day village with a view to finding out whether the material equipment differed with the different localities. It may be mentioned that no habitational evidence in respect of the Megalithic people either at Mahurjhari or in its environs has been noticed.

The diameter of the excavated circles ranged between 11.38 and 18.2 m. In all cases the circles were planned on a disintegrated *murum* horizon. After the placing of the stones in a circle the skeletons or skeletal remains were deposited along with other funerary goods and covered with earth, the latter capped by pebbles. Some of the stones of the circles have shallow rows of circular cup-marks.

The stone circles give evidence of the interment of full human skeletons, mostly found crushed by the debris above, laid mostly n.-s., with the head to the n. and legs to the s. In most cases a stone circle would contain one human skeleton, but in three cases more than one skeleton has been interred, whereas in one case a twin burial has been resorted to. Along with the dead, Black-and-red Ware [11.15] pots, objects of iron and copper, ornaments of gold, etched and non-etched beads of semiprecious stones like agate and carnelian and mostly the remains of a horse as also iron bits and copper face-masks of the horse have been found buried. The most notable evidence is in respect of the burial of a person the lower portions of whose legs were missing but on whose chest was kept a dagger with iron blade and copper hilt.

The pottery associated with these burials comprises three main fabrics: the Megalithic Black-and-red having the dish, bowl, lid and globular pot and stand; the micaceous red ware which is ill-baked and contains large flakes of locally available mica; and a few pieces of painted ware having linear designs in black on a dull-red surface. In the first ware is a notable piece of a cover with tapering top capped by a finial of a goat motif.

The iron kit comprises flat rectangular axes with cross-bars, lances and spears, objects of toilet like nail-parers, carpentry tools like chisels [6.5] and adzes [6.2] and kitchen objects like frying pans. Copper is found utilized for making dishes and solid bangles with overlapping ends bearing etched chevron decoration. Gold accounts for wire necklaces and ear rings.

Along with the buried horse have been found bells [6.3] of copper with iron tongue and horse face-masks of copper sheet with conical knobs rivetted with iron pins at the back and the whole mounted on leather base. It may be pointed out that similar masks have been found in s. Russia and Iran where they are assigned to the Scythians. They have also been reported in Siberia especially in the Altai region.

A study of the skeletal remains has shown that no general observations are possible because they have been found in a badly crushed state. However the bones show a sturdy stature and average height. In several cases the teeth show caries.

A significant feature of some of the equipment, especially terracotta and copper lids with goat and bird motif at the finial, is that some items show contact with the s. as their parallels have been reported from ADICHANALLUR. The Mahurjhari megaliths are typologically and in terms of equipment akin to those from TAKALGHAT-KHAPA in the region of Vidarbha which have given ^{14}C dates of 7th-6th century B.C.

Deo, S.B., 1973, *Mahurjhari Excavation 1970-2*, Nagpur.—S.B. DEO

Mahuva, See PURNAVALLEY.

Mahuwa, Dt Tonk. Site with Series I (Lower Palaeolithic [4.2]) tools on the Banas.
IAR 1958-9.

Mahuwar, Dt Agra. PGW [11.14] site.
IAR 1959-60.

Maihar (24°16';80°46'), Dt Satna. A Lower Palaeolithic [4.2] factory site is situated at a distance of about 3 km to the w. of the town on both the sides of Jharada temple road. The assemblage is divisible into cores, flakes, waste flakes, handaxes and fragments thereof, cleavers and scrapers. A Megalithic [4.5] site is situated on the left bank of the nullah joining the tiny rivulet Lalji. Microliths in the form of cores, flakes, scrapers, blades, lunates, triangles and points are found scattered over a considerable area. As the objects have been found in different stages of manufacture, the site may be regarded as a factory site.

Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad, pp. 1-13. Misra, V.D., & Pandey, J.N., 1977, in *Man & Environment*, 1.

Maillesvara, Dt Bijapur. Chalcolithic [4.14.8] habitation site. See BAGLUR.

IAR 1960-1.

Mailgherry hills, Dt Salem. Megalithic [4.17.9] site with cromlechs (a vague term to denote a dolmen

bounded by a stone circle).

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Maindana, Dt Dhule. Chalcolithic [4.14.8] burial site.

IAI 1959-60.

Maingaon, Dt Bolangir. Microliths (of unspecified nature).

IAI 1963-4.

Mainpur Cheek, Dt Chanda. Site on the Satti nullah with fluted cores and triangles.

IAI 1968-9.

Mainpuri, Dt Mainpuri. Six copper rings (perhaps of the Copper Hoard culture [4.11]).

AI, 7, 1951, p. 38A. *Proc. Asiatic Soc. Bengal*, 1868, pp. 251, 262. *Catalogue of Arch. Collection in Indian Museum, Calcutta*, 1883, 2, p. 403.

Mairadih, Dt Ballia. Black-and-red ware (of unspecified nature).

IAI 1963-4.

Maishamura, Dt Bankura. Microliths (of unspecified nature).

IAI 1959-60.

Majgahan, Dt Durg. Megalithic [4.17.6] site.

ASI-AR, 1930-4

Majhadpur¹, Dt Hardoi. Copper Hoard [4.11] site.

AI, 7, 1951, pp. 20, 29.

Majhadpur², Dt Saharanpur. Śunga-Kushan pottery.

IAI 1964-5.

Majhagham, See SORAR.

Majhawan, Dt Banda. Painted rock-shelter [13].

Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad, p. 54.

Majhiari, Dt Allahabad. Neolithic [4.6.3] site on the Lapari.

IAI 1970-1.

Majhigawan, Dt Allahabad. Late Stone Age (Mesolithic [4.5]) and Megalithic [4.17.3] site.

IAI 1963-4.

Majholi, Dt Jabalpur. Microliths (of unspecified nature).

IAI 1962-3.

Majri, Dt Ahmadnagar. Chalcolithic [4.14.6] site.

IAI 1959-60.

Majti, Dt Belgaum. Extensive site (of unspecified nature).

IAI 1966-7.

Makanpur, Dt Meerut. PGW [11.14] and NBPW [11.16] site on the left bank of the Yamuna.

Sharma R.D., 1976, in *Arch. Congress & Seminar*, 1972, Kurukshetra.

Makansar, Dt Rajkot. Site with Harappa Ware [11.3].

IAI 1957-8.

Makasar, Dt Ganganagar. RANG MAHAL [4.24] site. See SARASVATĪ VALLEY.

Unpublished.

Makavana, Dt Bhavnagar. Site in the Ghelo valley with Harappa Ware [11.3], coarse corrugated ware, Lustrous Red Ware [11.9], Chalcolithic black-and-red ware

[1.6.2] and Red Polished Ware [11.23].

IAI 1960-1; 1971-2.

Makhan-Windi, Dt Amritsar. Early historical [4.18.1] site.

IAI 1963-4.

Makinaikpatti, Dt Coimbatore. Megalithic [4.17.9] site.

Madras Jour. of Literature & Science, 1888-94, pp. 13-20.

Makkhi-ki-Kot, Dt Ghazipur. Early historical [4.18.1] site yielding Black-slipped Ware [11.13], NBPW [11.16] and red ware.

Bharati, 8, 1, 1964-5, p. 125.

Makla, Dt Ujjain. Historical site (of unspecified nature).

IAI 1971-2.

Makoriam, Dt Ujjain. Black-and-red, grey and early and late historical wares.

IAI 1970-1; 1971-2.

Makrawalpalli, Dt Cuddapah. Lower Palaeolithic [4.2] site.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Makronia, Dt Sagar. Microlithic (of unspecified nature) site.

IAI 1959-60.

Maksi, Dt Shajapur. Site with Kayatha Ware [11.7].

IAI 1968-9. Wakankar, V.S., 1976, *Arch. Congress & Seminar*, 1972, Kurukshetra.

Makvana (21°57'; 71°40'), Dt Bhavnagar. Late Harappa [4.10] site corresponding to RANGPUR II B.

AI, 18 & 19, 1962 & 1963, p. 206.

Malab, Dt Gurgaon. PGW [11.14] site.

IAI 1954-5. Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 126.

Maladkal, Dt Raichur. Megalithic [4.17.8] stone circles.

Jour. Geological Survey of Hyderabad, 3, 1, pp. 76-82.

Malaikkovilur, Dt Tiruchchirappalli. Extensive Megalithic site with a large number of stone circles, cairn circles, dolmenoid cists with port-holes single, double or triple circles 3 to 16 m in diameter and Black-and-red Ware [11.5].

IAI 1963-4. Gururaja Rao, B.K., in *Prof. Nilakanta Sastri Felicitation Vol.*, Madras, 1971.

Malaippattu, Dt Chingleput. Megalithic [4.17.9] site.

AI, 22, 1966, p. 29.

Malaivaiyavur, **Mampattu**, Dt Chingleput. Megalithic [4.17.9] site.

AI, 22, 1966, p. 30.

Malaiyamputtu, Dt N. Arcot. Excavation was undertaken inside a cavern with 10th-century paintings at Arumbhavimalai near Malaiyamputtu, later on converted into a temple of mud brick. The temple was built over an earlier deposit yielding in the lower levels sherds of the Megalithic Black-and-red Ware [11.15.3] along with those of handmade and coarse black-slipped ware, burnished or unburnished. This phase may be dated from the 3rd century B.C. to about the 1st century

A.D. The post-Megalithic culture was represented by the Russet-coated Painted Ware [11.22] besides a dark-brown-slipped ware.

IAR 1970-1.

Malakpur, Dt Bhagapur. Late Stone Age (Mesolithic [4.5]) site.

IAR 1965-6.

Malakuyilkudi, Dt Madurai. Megalithic [4.17.9] site.

IAR 1957-8.

Malampuzha, Dt Palghat. Middle Palaeolithic [4.3] and Mesolithic [4.5] industries in the Bharathapuzha basin.

Joshi, R.V., & Rajendran, 1976, *Bull. Deccan College Res. Inst.*, 35, pp. 51-65.

Malandighi, Dt Burdwan. Mesolithic [4.5] microliths.

AI, 14, 1958, p. 34.

Malandur, Mamandur, Dt N. Arcot. Lower Palaeolithic [4.2] site on the Korttalayar.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, p. 173. Foote, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 72.

Malanjan, Dt Dhule. Late Stone Age (Mesolithic [4.5]) site.

IAR 1962-3.

Malaprabha, a major s. tributary of the Krishna, its source lying in the Sahyadri spurs, about 13 km w. of Jamboti in Khanapur (15°42'; 74°35') Taluka, Dt Belgaum, and its basin lying approximately between 15°30' to 16°12' and 74°15' to 76°4'. Its name appropriately describes the mud-carrying character of the stream and its tributaries. Its total length from the source to the confluence with the Krishna is nearly 330 km and within this distance, besides maintaining a general meandering pattern, it has changed its direction several times, often sharply. Its average gradient is about .9 m per km. But due to the varied geological foundation composing gneisses, quartzites, shales and the Deccan trap over which it flows at different lengths in its course it displays both youthful and mature aspects in its valley forms.

The Quaternary [9.8] deposits exposed along the river banks at various places consist of basal mottled clay and gravel overlain by brown sand and topped by black soil [9.1]. Unlike the very thick alluvial deposits obtained in the GODAVARI, TAPTI and NARMADA those in the Malaprabha are thin. They are unfossiliferous and no terrace forms are visible in the valley. The deposits themselves do not throw any light on the palaeoclimates of the area. It should however be mentioned that the present river does not transport coarser gravel which is seen exposed at the base of the cliffs and which is the horizon yielding Lower Palaeolithic [4.2] industries. Whether this feature is indicative of a comparatively wet climate in the past cannot be said definitely.

The Malaprabha basin is one of the areas very rich in Lower Palaeolithic [4.2] industries. It shows a complex

assemblage of various types of tools ranging from cruder forms to very fine artefacts, which cannot be differentiated stratigraphically as all come from the same horizon. The quartzite of the Kaladgi series is the chief rock material used in the manufacture of these tools but a few of them are on sand-stone, schist and granite. Most of them are made on flakes, pebble or core tools being small in number. A vast majority exhibit the Acheulian technique [16.15] visible in small flake scars, some showing step flaking, completely flaked body, almost straight edges and usually symmetrical biconvex cross-sections. The tools comprise varieties of handaxes, cleavers, picks, scrapers, choppers, discoids, worked and simple flakes and cores. The handaxes and cleavers, the two leading tool types, occur in approximately equal proportions.

Of the over 20 sites yielding Lower Palaeolithic tools the following sites are important for the number of tools found there and for stratigraphic data: HIRE MULANGI (15°55'; 75°23'); ALUR (15°35'; 75°28'); MEGUR-ASOTI (Menasgi) (15°49'; 75°40'); KHYAD (15°51'; 75°43'); and MANERI (15°50'; 75°40'). The deposits are well exposed at TAMINHAL (15°50'; 75°40'), where in the later surveys have been found Middle Palaeolithic [4.3] tools in the gravel overlying the basal gravel containing the Lower Palaeolithic ones.

The first discovery of palaeoliths from this area was by R.B. Foote in 1876. Subsequently it was visited by F.E. Zeuner and his party in 1948. The systematic study of the stratigraphy, chronology and Stone Age cultures of the entire basin was carried out by the writer in 1950-2.

Foote, R.B., 1876, *Geological Features of the S. Maratha Country & Adjacent Dts*, Mem. Geological Survey of India, 12. Joshi, R.V., 1955, *Pleistocene Studies in the Malaprabha Basin*, Poona & Dharwar.—R.V. JOSHI

Malangpura (33°53'; 74°59'), Dt Anantanag. A stupa reduced to its base.

Kak, R.C., 1933, *Ancient Monuments of Kashmir*, London, p. 125. Misra, D., 1971, *Buddhist Monuments*, Calcutta, p. 113.

Malarkhera, Dt Jind. Late Harappa [4.10] comparable with MITATHAL II B and PGW [11.14].

Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 125.

Malavalli, Dt Shimoga. Early historical [4.18.11] site.

Karnataka Bharati, 8, 2, pp. 11-12.

Malavarayanattam, Dt Tirunelveli. Megalithic [4.17.9] site.

ASI—AR 1902-3.

Malaw, Dt Banda. Painted rock-shelter [13].

Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad, p. 54.

Maldaria, Dt Mirzapur. Rock-shelter with paintings [13].

Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad, p. 55.

Maldiha, Dt Birbhum. Microliths (of unspecified nature).

IAR 1963-4; 1965-6.

Malehra, Dt Meerut. OCW [11.5] site.

IAR 1968-9.

Maleta, Dt Kangra. Lower Palaeolithic [4.2] site in the BEAS VALLEY.

Mohapatra, G.C., 1966, in *Bull. Deccan College Res. Inst.*, pp. 221-37.

Malgoanpada, Dt Dhule. Microliths (of unspecified nature).

IAI 1961-2.

Malhar, Dt Bilaspur. Pottery and coins (both of unspecified nature).

IAI 1968-9.

Malial, Dt Medak. Megalithic [4.17.7] stone circles.

IAI 1961-2.

Maligram, Dt Birbhum. Middle (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) site in the valley of the Bakreshwar.

IAI 1966-7.

Malinithan, Dt Siang, situated in the foothills, its name derived from the legend that here Pārvaṭī offered garlands to Kṛṣṇa and Rukmiṇī when Kṛṣṇa addressed her as Mālinī. The site was excavated from 1968 to 1973 by the writer as the Director of Research, Arunachal Pradesh. The finds consist of the ruins of stone temples and sculptures in relief and in the round belonging to different periods from c. 10th to 14th centuries.

Chakravarty, L.N., 1974, *Malinithan*, Shillong.—L.N. CHAKRAVARTY.

Malinthalpadu, Dt Kurnool. Series I and II (Lower [4.2] and Middle [4.3] Palaeolithic) site on the Gundlakamma.

IAI 1959-60.

Mali-Pahar, Dt Bhagalpur. Palaeolithic (of unspecified nature) were found at Raja-Pokhar, Bhaljore and Rajdot.

IAI 1960-1.

Malkanhalli, Dt Dharwar. Megalithic stone circles [4.17.8] with Black-and-red Ware [11.15.3].

IAI 1959-60; 1960-1.

Malkhand, Dt Dhule. Microliths (of unspecified nature).

IAI 1961-2.

Malkhed¹, Dt Gulbarga. Microlithic hollow scrapers and side scrapers [4.5] were found on the banks of the Kagine. The site also yielded Red Polished Ware [11.23] and red ware assignable to the 1st-4th centuries.

IAI 1968-9.

Malkhed², Dt Raichur. Fragmentary polished stone axes and Neolithic [4.6.9] grey ware.

IAI 1968-9.

Malkup, Dt Ahmadnagar. Mesolithic [4.5] site.

IAI 1960-1.

Mallabad, Dt Gulbarga. Megalithic [4.17.8] site with stone circles.

Jour. Geological Survey of Hyderabad, 5, 1, p. 56.

Mallampalli, Dt Kolar. Megalithic [4.17.8] site with stone circles and cists.

IAI 1972-3. Also information from C. Krishnamurthy through A. Sundara.

Mallappahalli, Dt Kolar. Megalithic [4.17.8] site.

IAI 1971-2.

Mallappakonda, Dt Anantapur. Neolithic [4.6.8] habitation site. See AKKAMMAKONDA.

IAI 1965-6.

Mallapur, Dt Raichur. Megalithic [4.17.8] site.

Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, p. 72.

Mallapura, Dt Mysore. A large cairn field [4.17.8].

Seshadri, M., 1960, *Report on the Jadigenahalli Megalithic Excavations*, Bangalore, p. 3.

Mallapuram¹, Dt Anantapur. Neolithic [4.6.8] habitation site and ash-mound [14.3]. See AKKAMMAKONDA.

IAI 1965-6.

Mallapuram², Dt Ballary. Port-holed cists [4.17.8].

Taylor, M., 1853, in *Jour. Bombay Branch Royal Asiatic Soc.*, 4.

Mallapuram³, Dt Madurai. Dolmens [4.17.9].

IAI 1958-9.

Mallarapallya, Dt Mysore. Megalithic [4.17.8] habitation site.

Information from C. Krishnamurthy through A. Sundara.

Mallaur, Dt Ambala. PGW [11.14] site.

IAI 1963-4. Suraj Bhan, 1975, *Excavation at Mitthal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 123.

Mallavaram, Dt Guntur. Dolmenoid cists and stone-circles [4.17.8].

IAI 1963-4.

Mallawala Tibba, Dt Ganganagar. Harappa [11.3] and RANG MAHAL [11.24] Wares. See SARASVATĪ VALLEY.

Unpublished.

Mallekha (29°26'; 74°55'), Dt Hissar. RANG MAHAL [11.24] site.

IAI 1967-8.

Mallepadu¹, Dt Guntur. Ash-mounds [14.3]. (Same as following?).

IAI 1962-3.

Mallepadu², Dt Guntur. The occupation strata yielded sherds of the Megalithic [11.15] Black-and-Red Ware and all-black and red wares besides beads of semiprecious stones. (Same as preceding?).

IAI 1966-7.

Mallian, Dt Jullundar. Late historical site yielding the knife-edged bowl, shallow dish-cum-bowl, deep basin and vase in red ware.

IAI 1972-3.

Malliappanahalli, Dt Kolar. Megalithic [4.17.8] stone circles.

IAI 1972-3.

Mallikarjunadurgam, Dt Dharmapuri. Megalithic [4.17.9] sites with dolmenoid cists and stone circles.

IAI 1967-8.

Mallipalli, Dt Anantapur. Ash-mound [14.3].

IAI 1965-6.

Mallopur, Dt Raichur. Megalithic [4.17.8] habitation site.

Arch. Studies, 3, p. 179.

Mallur¹, Dt Belgaum. Middle Palaeolithic [4.3] site.

IAR 1972-3, p. 60.

Mallur², Dt Gulbarga. Middle and Upper Palaeolithic [4.3, 4] sites; two ash-mounds [14.3]; also a Megalithic [4.17.3] site.

Jour. Geological Survey of Hyderabad, 4, 1, p. 157. Paddayya, K., 1973, *Investigation into the Neolithic Culture of Shorapur Doab*, s. India, p. 5.

Malotha, Dt Valsad. A large number of flakes from basal pebbly gravel on the left bank of the Zakri, a tributary of the Purana.

IAR 1969-70.

Malowal, Dt Gurdaspur. Early historical [4.18.1] remains. See ACHAL-SAHEB.

IAR 1961-2.

Malpur, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1962-3.

Malsaram, Dt Junagadh. Red Polished Ware [11.23].

IAR 1957-8.

Malthone, Dt Sagar. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAR 1968-9.

Malvan, Dt Ratnagiri. Factory sites of Early Stone Age (Lower Palaeolithic [4.2]) were found. The tool assemblage is predominated by flakes, cores and chips. See KANDIVLI.

IAR 1971-2.

Malwan (21°71'; 72°42'), Dt Surat, on the lower estuary of the Tapti, e. of Dumas, the mound lying on the inner side of a basin formed by two nullahs which jointly flow into the Tapti. The basin covers more than 1 sq km and is roughly kidney-shaped. Today its flow is a salt flat dissected by meandering channels. The site stands on a bank some 2 m in height. F.R. Allchin and the writer discovered the site in 1967 while exploring the estuaries of the Gujarat coastal plain to define the s. limits of the Harappa culture [4.9]. The site is greatly eroded and a large part of the ancient habitation has disappeared. Excavation was jointly conducted in 1970 by the writer and his assistants in the ASI and Cyrus Guzder of the Univ. of Cambridge. (*IAR* 1969-70, p. 7).

Two Pds of cultural activities were met within a deposit of 1.3 m in an area of 15 × 30 m. Pd I represented an essentially late Harappa [4.10] to post-Harappa Chalcolithic [4.14] occupation and Pd II consisted of a group of late historical pits and hearths of some temporary occupation.

The principal structural remains of Pd I are a ditch, first identified during the exploration, which are in an e.-w. direction and has been traced to a length of 18-30 m. It has an average depth of 1.10 m and width of 1.50 m cut

into the natural soil. The ditch is not quite regular either in cutting or in alignment. Generally its sides are inclined at an angle of 30°. The spoil from its original excavation was spread on both sides and particularly the n. side was banked up to form the base of a substantial mud brick structure which has been traced to a fair distance. The original form of the structure is not clear as it is considerably eroded and damaged by pits. Its maximum width is 3 m and six to seven courses of mud bricks (27 × 17 × 9 cm) survive at places. The ditch appears to be widening towards the e. side and taking a turn towards the n. which has a natural fall of the present ground level. It is inferred that the original habitation lay principally to the n. which has a natural fall of the present ground level and has therefore entirely disappeared. To the s. of the ditch a number of post-holes at intervals of 2-80 m were dug into the heaped soil apparently to provide some sort of fence. Beyond the ditch the occupational deposits rapidly decrease towards the s. and w. The filling of the ditch has yielded a good quantity of cultural debris including cattle bones. Even after the ditch was completely filled occupation continued without any apparent change.

A series of small trenches was across the surface of the kidney-shaped inlet towards the principal channel connecting it with the Tapti estuary at a distance of 1.50 km from the sea. These trenches have revealed alternate deposits of sand and mud presumably laid down in earlier channels. They have also produced quantities of shell, both fresh-water and marine, blade cores, flakes and potsherds at varying depths.

While the bulk of pottery recovered from Pd I is essentially Chalcolithic, the pottery of Pd II from the upper levels characteristically represents a temporary occupation during late historical times. The pottery of Pd I can be divided into six major industries: (1) red ware; (2) buff ware; (3) Lustrous Red Ware [11.9]; (4) black-and-red ware [11.6]; (5) coarse red ware; and (6) grey ware. It is noteworthy that the white-painted black-and-red ware is totally absent from the assemblage, nor is the white-painted grey ware of PRAKASH available. While on the one hand some of these wares show similarity with the pottery of comparable age from some excavated sites in Saurashtra, others show affinities with the pottery of the contemporary known Chalcolithic cultures of the upper Deccan [4.14.6] and Kurnool area [4.14.7] and thus provide a point from where diffusion of cultural traits might have taken place.

The other objects are diminutive blades made on tiny cores of jasper, agate, chalcedony and bloodstone with an unexpectedly high ratio of cores to flakes or blades and an almost total absence of retouched specimens. A

number of small objects of copper or bronze have been recovered, notably a bangle and a small rod. Amongst the terracotta objects small humped bulls and a number of circular or bun-shaped terracotta cakes may be mentioned. A small number of beads of paste and carnelian have also been recovered.

The occupation of Pd II was temporary or squatter in character and the grey-to-black pottery which characterizes it probably dates from the end of the first millennium A.D.

Preliminary study of the animal bones by K.R. Alur and A.K. Sharma shows that most of them are in a mineralized state. The animals represented are the cattle, sheep and goat, dog, horse, hog, pig, *barasingha* and fish. The presence of some aquatic animals besides fish is also suspected. Cattle bones form a major part of the collection and are massive, large and medium-sized. The presence of large and small-sized cattle shows that the people of Malwan were aware of animal husbandry. There is a clear indication of free grazing and stall feeding involving an advanced stage of domestication of cattle. From the nature of cut and burn marks it is clear that the inhabitants used the flesh and marrow as food; this is further suggested by cracking, flaking, cutting, stabbing and puncture marks present on the bones. Pork formed a substantial portion of the diet.

Joshi, J.P., & Allchin, F.R., 1972, in *Arch. Congress & Seminar Papers*, Nagpur, pp. 36-42.—J.P. JOSHI

Malyam, Dt Bellary. Neolithic [4.6.9] site yielding celts, corn-crushers, and pottery.

Footc. R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Mama Bhagne Pahar, Dt Birbhum. Microlithic [4.5] site.

IAR 1971-2.

Mamandur, Dusi-Mamandur, Dt N. Arcot. Megalithic [4.17.9] site. See MALANDUR.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras, p. 166.

Mambodi, Dt Coimbatore. Megalithic [4.17.9] site with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Mamdapur (16°06'; 74°55'), Dt Belgaum. Middle Palaeolithic [4.3] site. See GHATAPRABHA VALLEY.

Mamluka, Dt Gurgaon. Pre-Harappa [4.8] site.

Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 126.

Mampattu. See MALAIVAIYAVUR.

Man, Dt Panch Mahals. Mesolithic [4.5] site.

IAR 1972-3.

Mana, Dt Rohtak. Late Harappa [4.10], PGW [4.10] and early historical [4.18.1] site.

Jour. Haryana Studies, 3, 1, p. 5.

Manadu, Dt Tirunelveli, over 1 km s.e. of the

Kudiraimoli *teri* [9.5]. With two exceptions there are no definite tool types but a number of flakes suggest that they were struck by man. See SAWYERPURAM.

AI, 12, 1956, p. 14.

Managavan-ki-Bhanthi, Dt Banda. Microlithic (perhaps of Chalcolithic [4.14.2] affiliation) factory site yielding parallel-sided flakes, points, lunates, penknives and scrapers.

IAR 1961-2.

Managondanahalli, Dt Bangalore. Megalithic [4.17.8] site with cists and menhirs. Also Late Stone (Mesolithic [4.5]) site.

Seshadri, M., 1956, *Stone-using Cultures of Pre- & Proto-historic Mysore*, London, p. 60. IAR 1970-1.

Manak Majra, Dt Karnal. Late Harappa [4.10] site comparable with SISWAL B.

Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 125.

Manakpor, Dt Saharanpur. PGW [11.14] and associated wares.

IAR 1963-4.

Manaksar, Dt Ganganagar. RANG MAHAL Ware [11.24] and shell bangles. See SARASVATĪ VALLEY.

Unpublished.

Manaksar Tibba, Dt Ganganagar. RANG MAHAL Ware [11.24].

Unpublished.

Manamadura, Dt Madurai. Megalithic [4.17.9] site on the left bank of the Vaigai with a small number of buried urns and a few menhirs of moderate size.

Footc. R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Manamai, Dt Chingleput. Megalithic [4.17.9] site.

AI, 22, 1966, p. 30.

Mananthaddy, Dt Cannanore. Megalithic [4.17.10] site with rock-cut caves.

IAR 1971-2.

Mananu, Dt Kathua. Early Stone Age (Lower Palaeolithic [4.2]) tools were collected from the terrace of the river Basautar. Two stray mace-heads were also found.

IAR 1968-9.

Manappadai, Dt Tirunelveli. Megalithic [4.17.9] site.

ASI—AR 1902-3.

Manavasi, Dt Tiruchchirappalli. Site with Megalithic Black-and-red Ware [11.5].

IAR 1962-3.

Manawar, Dt Dhar. Site with Kayatha Ware [11.7].

Wakankar, V.S., 1976, in *Arch. Congress & Seminar*, 1972, Kurukshetra, p. 56.

Manchakallu, Dt Kolar. Megalithic [4.17.8] site with cists having more than five circles, the stones supported by a dry stone wall.

Information from C. Krishnamurthy through A. Sundara.

Manchala, Mantralayam, Dt Kurnool. Mesolithic [4.3] site.

IAR 1964-5.

Manchalapur, Dt Raichur. Neolithic [4.6.9] and

Megalithic [4.17.8] site.

Arch. Studies, 3, p. 170.

Manchanpalli, Dt Mahbubnagar. Site with ash-mounds [14.3].

Allchin, F.R., 1963, *Neolithic Cattle-keepers of s. India*, pp. 8, 61, 67.

Manchapura, Dt Mysore. Megalithic cist burials [4.17.8].

IAR 1961-2.

Manchikallu, Dt Guntur. Megalithic [4.17.7] burials and Black-and-red Ware [11.15].

IAR 1962-3.

Manchitra, Dt Birbhum. Site with microliths (of unspecified nature).

IAR 1964-5.

Manchugondapalli, Dt Dharmapuri. Megalithic [4.17.9] site.

IAR 1967-8.

Mand, See EBGODU.

Manda (36°56'; 74°48'), Dt Jammu, on the right bank of the Chenab in the foothills of the Pir Panjal range, excavated by the writer in 1976-7. The 9-20 m deposit has a threefold sequence, with two Sub-pds in Pd I. Sub-pd I A is marked by the arrival of the Harappans [4.9], who had the pre-Harappa [11.2] red ware (15 to 20%) as well, the jar with thick painted horizontal bands being reminiscent of the pre-defence phase of Harappa; a rusticated ware is also met with. The Harappa ware [11.3] includes the jar, dish, dish-on-stand, beaker and goblet but no perforated jar. There are a copper pin of w. Asian affinity, bone arrowheads, terracotta cakes [6.27], sherds with Harappa graffiti [20.4.1], chert blades and an unfinished seal. In Sub-pd I B the Harappa red ware and grey ware are associated with the PGW [11.14]. In the former the beaker and goblet are absent. The grey ware is represented by the dish and bowl, the ware being in the proportion of 7 to 19%.

Pd II has the early historical [4.18.1] pottery of types comparable with those of that period from n. India. Pd III is represented by Kushan antiquities and impressive house walls of rubble diaper masonry flanked on both sides of a 3 m wide street.

—J.P. JOSHI

Mandai, Dt Mainpuri. Site with PGW [11.14] and NBPW [11.16].

IAR 1965-6.

Mandak-Kuva, Dt Kutch. Historical site. See AJMEL.

IAR 1965-6.

Manda-Kolattur, Dt N. Arcot. Megalithic Black-and-red Ware [11.15] and Russet-coated Painted Ware [11.22].

IAR 1962-3.

Mandal', Dt Dhule. Lower Palaeolithic [4.2] and Chalcolithic [4.14.6] site.

IAR 1960-1.

Mandaf, Dt Rajkot. Site with Harappa Ware [11.3] and

Red Polished Ware [11.23].

IAR 1957-8.

Mandalgram, Dt Burdwan. Mound with black-and-red (of unspecified nature), black burnished and red wares.

IAR 1968-9.

Mandapur, Dt Gulbarga. Seemingly Megalithic [4.17.8] site, whether the stone circles here are really Megalithic being uncertain.

IAR 1963-4. Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 81-6.

Mandarpura, Dt Ganganagar. Mound yielding historical plain red ware and a copper coin of Gondopharnes.

IAR 1972-3.

Mandavi, Dt Sangrur. PGW [11.14] site.

Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 124.

Mander, Dt Udaipur. Series III (Mesolithic [4.5]) tools.

IAR 1955-6; 1959-60.

Mandewal, Dt Gulbarga. Neolithic [4.6.9] Chalcolithic [4.14.8] site, also with Megalithic [4.17.8] cists. A few megaliths are rectangular.

IAR 1963-4. Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 21-2.

Mandha, Dt Jaipur. OCW [11.5], PGW [11.14] and Kushan ware and terracottas.

IAR 1972-3.

Mandhal (20°9'; 79°5'), Dt Nagpur, excavated by the writer in 1978, but explored previously (*IAR* 1969-70; 1970-1). One of the trenches, MDL-I, gave evidence of occupation during Sātavāhana times (1st century B.C. to 3rd century A.D.), characterized by plain black-and-red ware [11.6], both burnished and unburnished, and black-painted red ware. There are remains of brick structures and terracotta tiles [14.6.5] with provision of insertion of nails. On the basis of pottery it is comparable with the later half of Pd II A and earlier half of Pd II B of PAUNAR and Pd IV of KAUNḌINYAPURA.

Excavation at three other sites, one at the outskirts of the village, MDL-II, and two at a mound called Bhola Hudki a little away, BHK-I and BHK-II, has revealed the remains of three temples datable to the Vākātaka-Gupta period. Rebuilt twice, the original temple at MDL-II, build of brick in the early Vākātaka period, was reconstructed on a somewhat larger scale in dressed stone in the late Vākātaka period or shortly thereafter. Finally it was provided with a rubble wall raised on the remains of the earlier stone wall some time in the 12th century.

The temple at BHK-I was raised on a rectangular platform roughly measuring 18 × 10.6 m and 1.2 m in height. The nature of the superstructure cannot be ascertained. The platform is approached by a flight of steps on the n., and on its e. is a brick-built water cistern, measuring 2.3 × 2.5 m and 1.59 m deep. Remains of a couple of brick chambers, perhaps representing the resi-

dence of the priest or temple attendant, have been noticed on its west.

The temple at BHK-II situated on the top of a hillock comprises a *gurbha-grha* and *mukha-mandapa* measuring 4.5 × 5.6 and 4 × 3.3 m respectively. It is raised on a sloping rocky terrain levelled up by a massive brick platform measuring roughly 11.7 × 14.7 m. The rocky terrain slopes to the s. and as many as 32 brick courses had to be laid on this side to level up the site.

The Gupta-Vākātaka phase is distinguished by the presence of the Red Polished Ware [11.23]. This phase may be equated with the second half of Pd II B and first half of Pd III of PAUNAR and Pd III of PRAKASH.

In addition to the above three Vākātaka copper-plate grants, one of Pravarasena II and the two of Prthivīśena II, complete with rings and seals, and a dozen broken Brāhmanical sculptures, one of them 12-headed—eight heads on the top and two each on shoulders and thighs—have been found in pits at BHK-I.

—A.M. SHASTRI

Mandholi, Dt Chandrapur. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAR 1970-1.

Mandhur, Dt Deoria. Early historical site [4.18.1] with Buddhist remains and NBPW [11.16].

IAR 1962-3, p. 33.

Mandiala, Dt Amritsar. Black-slipped Ware [11.13], plain red and Śūnga-Kushan red wares.

IAR 1964-5.

Mandiaon, Dt Lucknow. Site with NBPW [11.16] and grey ware.

IAR 1961-2.

Mandira, Dt Birbhum. Site with black-and-red ware (of unspecified nature). There were also microliths, a kind of lustrous red ware and perforated pottery.

IAR 1963-4; 1965-6.

Mandiyan Theh, Dt Patiala. PGW [11.14] site.

Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 122.

Mandiyur, Dt Ramanathapuram. Microlithic (Mesolithic [4.5]) tools of the *teri* [9.5] industry.

IAR 1961-2.

Mandla, Dt Saharanpur. OCW [11.5] and PGW [11.14] site.

IAR 1966-7.

Mandlavaripalli, Dt Cuddapah. Shell bangle fragments and pottery probably of the Iron Age.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Mandi-ka-Mehra, Dt Jammu. Early historical site with plain, painted and decorated pottery.

IAR 1961-2.

Mando, Dt Allahabad. Megalithic [4.17.3] cairn circles and dolmenoid cists.

IAR 1962-3; 1963-4.

Mandolka, Dt Gurgaon. Mandolka-I yielded PGW

[11.14] and early historical material [4.18.1].

Punia, D.S., unpublished thesis, Kurukshetra Univ.

Mandoni, Dt Lucknow. NBPW [11.16] site.

IAR 1965-6.

Mandor¹, Dt Jodhpur. Late Stone Age (Mesolithic [4.5]) site with fluted cores, blades, points, awls, side and end scrapers and flakes. (Same as following?).

IAR 1967-8.

Mandor², Dt Jodhpur. Excavation revealed a Brāhmanical temple built on an unusual plan—a sanctum perched on the summit of three high terraces which diminish in size towards the top and are ascended by flights of stairs on the e., n. and s. sides. The sanctum which is the earliest part of the building must have been erected in the 7th or 8th century and was restored and enlarged during the 9th or 10th century and again in the 12th. (Same as preceding?).

ASI—AR 1909-10.

Mandowala, Dt Saharanpur. Site with OCW (?) [11.5], NBPW [11.16], Śūnga-Kushan and medieval wares.

IAR 1964-5.

Mandpia, Dt Bhilwara. Site on the river Banas with Series I (Lower Palaeolithic [4.2]) and Series II (Mesolithic [4.5]) tools.

IAR 1958-9.

Mandsaur, Dt Mandsaur. An early Stone Age (Lower Palaeolithic [4.2]) site was located on the n. outskirts of the town. The tools comprised handaxes and cleavers, besides a few scrapers and microlithic cores. The second gravel of the Shivena yielded tools of Series II (Middle Palaeolithic [4.3]). The older gravel produced a large core of jasper and a few scrapers along with occasional tools of Series I (Lower Palaeolithic [4.2]). On the e. fringe of the Qila mound a few painted sherds were found along with black-and-red ware (of unspecified nature) and a few cores. There was also black-painted red ware of the c. Indian Chalcolithic [4.14.5] assemblage (Kayatha Ware? [11.7]). See SHIVNA VALLEY.

IAR 1955-6; 1956-7; 1959-60; 1961-2. Wakankar, V.S., 1976, in *Arch. Congress & Seminar 1972*, Kurukshetra.

Manduru, Dt Guntur. Early historical [4.18.10] site.

Madras Arch. Reports, 18 June 1892, p. 6.

Mandwi, Dt Bhandara. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1959-60.

Manegaon, Dt Jalgaon. The site located on the Ganj nullah yielded Early, Middle (Lower, Middle Palaeolithic [4.2, 3]) and Late Stone Age (Mesolithic [4.5]) tools.

IAR 1965-6.

Mane-Mohali, Dt Chanda. Lower Palaeolithic [4.2] site.

IAR 1959-60.

Maner, Dt Patna. Sherds of black-and-red ware showing affinity with those of the Chalcolithic phase of CHIRAND, NBPW [11.16] and associated ceramics besides a fragment of a sprinkler in red ware, a

potter's dabber [16.11] and a terracotta ball were found.
IAR 1965-6.

Maneri, Dt Dharwar. Lower Palaeolithic [4.2] site. See MALAPRABHA VALLEY.

Joshi, R.V., 1955, *Pleistocene Studies in the Malaprabha Basin*, Poona & Dharwar, p. 33.

Maneru valley, Dt Nellore. Lower Palaeolithic implements [4.2].

Footo, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Mangad¹, Dt Panch Mahals. Microlithic (of unspecified nature) site.

Sonawane, V.H., 1976, in *Arch. Congress & Seminar, 1972*, Kurukshetra.

Mangad², Dt Trichur. Lateritic cave [4.17.10] of the circular type with vases and bowls of Black-and-red Ware [11.15].

IAR 1967-8.

Mangadh, Dt Panch Mahals. Late Stone Age (Mesolithic [4.5]) site.

IAR 1971-2.

Mangala¹ (29°28'; 74°58'), Dt Hissar. Three RANG MAHAL [11.24] sites in the vicinity of Mangala. There is also a site with red ware.

IAR 1966-7; 1967-8.

Mangala², Dt Mysore. Cairn circles [4.17.8].

IAR 1962-3.

Mangalakuntla¹, Dt Nellore. Megalithic [4.17.7] site with a large number of dolmens.

Sewell, R., 1882, *List of Antiquarian Remains in the Presidency of Madras*, Madras.

Mangalakuntla², Dt Prakasam. Megalithic [4.17.7] site.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Mangalam¹, Dt Coimbatore. Megalithic [4.17.9] site with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Mangalam², Dt Salem. Pointed-butt polished stone axes [4.6.10].

Brown, J.C., 1917, *Catalogue of Prehistoric Antiquities in the Indian Museum*, Calcutta, Simla.

Mangalampettai, Dt S. Arcot. Megalithic [4.17.9] stone circles.

IAR 1961-2.

Mangalampatti, Dt Coimbatore. Megalithic [4.17.9] site with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Mangaldih, Dt Birbhum. Site with black-and-red ware (of unspecified nature).

IAR 1967-8.

Mangali, Dt Hissar. Early historical [4.18.1] site.

Silak Ram, 1972, unpublished thesis, Kurukshetra Univ.

Mangalkot (23°33'; 87°55'), Dt Burdwan, on the confluence of the Ajoy and Kunoer with rolling mounds abounding in relics ranging from prehistoric to early historical times, in addition to medieval remains. Some

exposed sections reveal a stratigraphic situation appropriately confirmed by surface finds. A scraping carried out in an eroded portion of the site has yielded the following sequence which however requires confirmation by a larger excavation.

The lowest level contains the essential equipment of the Chalcolithic culture [4.14.4] which included the black-and-red ware [11.6.5], plain or painted in white, bright-red ware, plain or painted in black pigment, and a sturdy red ware. The types are in general agreement with those of the other Chalcolithic sites of W. Bengal such as PANDU RAJAR DHIBI and MAHISDAL, though the scraping was inadequate to yield other details of the culture.

The next phase is represented by antiquities, mainly terracottas, and covers in general the early historical times, from the Mauryan to Kushan ages and the Gupta age. The succeeding occupation has stone sculptures in the late historical style. The top level is represented by a ruined mosque partly built of massive architectural members of a Brahmanical temple.

—S.K. MUKHERJEE

Mangalli, Dt Mysore. Megalithic [4.17.8] cist burials.

IAR 1961-2.

Mangas, Dt Udaipur. Black-and-red ware (of AHAR² culture? [11.6.2]). See KADUKOTA.

IAR 1957-8.

Mangiana, Dt Hissar. Early historical [4.18.1] site.

Silak Ram, 1972, unpublished thesis, Kurukshetra Univ.

Mangod, Dt Dharwar. Early historical [4.18.11] site.

IAR 1960-1.

Mangrup, Dt Bhilwara. Series III (Mesolithic [4.5]) tools.

IAR 1957-8; 1959-60.

Manguwal, Dt Rupnagar. PGW [11.14] was noticed on the bank of the Chikni Nadi.

IAR 1954-5. Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Doab*, Kurukshetra, p. 122.

Manhairu, Dt Bhiwani. Pre-Harappa [4.8] site comparable with Late SISWAL.

Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in Sutlej-Yamuna Divide*, Kurukshetra, p. 126.

Manheru, Dt Mahendragarh. Manheru-I yielded late Harappa [4.10] material.

Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.

Manhorpur, Dt Jind. Late Harappa [4.10] and grey ware site.

IAR 1966-7.

Manigramam, Dt Thanjavur. Megalithic [4.17.9] and early historical [4.18.16] site.

IAR 1961-2; 1963-4.

Manikpur-Sharif, Dt Rupnagar. Harappa [4.9] and late Harappa [4.10] site.

IAR 1962-3. Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 122.

Manimajra, Dt Chandigarh. PGW [11.14] site.

IAR 1966-7. *Haryana Studies in History & Culture*, p. 139.

Maniyabadi, Dt Dharmapuri. Megalithic [4.17.9] cairn circles.

IAR 1970-1.

Manjani, Dt Salem. Megalithic [4.17.9] site with cairns.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Manjankaranai, Dt Chingleput. Lower Palaeolithic [4.2] site on the river Korttalayar.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras. *AI*, 3, 1947, p. 94.

Manjarkhed, Dt Amravati. Series II (Middle Palaeolithic [4.3]) tools and microliths (of unspecified nature).

IAR 1960-1.

Manjha Khera, Dt Mahendragarh. Early historical [4.18.1] site.

Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.

Manjhi, Dt Saran. The mound on the n. bank of the Ganga contains 12.2 m high earthen ramparts revetted both externally and internally with baked brick. The mound yielded dishes-on-stand in red ware, plain and fine grey-ware bowls and dishes, sherds of NBPW [11.16], creamish-buff ware and black-and-red ware and iron slag. Bricks measuring 45 × 25 × 75 cm were found. Other finds included beads of quartz and carnelian besides red ware of later periods.

IAR 1962-3; 1967-8.

Manjhigarh, Dt Saran. Same as MAJHI (?).

IAR 1961-2.

Manjhwani, Dt Kangra. Lower Palaeolithic [4.2] site in the BANGANGA VALLEY.

Mohapatra, G.C., 1966, in *Bull. Deccan College Res. Inst.*, pp. 221-37.

Manjra¹, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1961-2.

Manjra², Dt Warangal. Russet-coated Painted Ware [11.22] site.

Manjri, Dt Ahmadnagar. Series II (Middle Palaeolithic [4.3]) tools and microliths of the Chalcolithic [4.14.6] period.

IAR 1959-60.

Manjrikangar-Budruk, Khurd, Dt Ahmadnagar. Early historical [4.18.9] site.

IAR 1959-60.

Manjrod, Dt Dhule. Site with Series I (Lower Palaeolithic [4.2]) tools: Abbevillio-Acheulian handaxes, cleavers, discoids, scrapers, etc., made on trap and quartzite together with pebble tools; Series II (Middle Palaeolithic [4.3]): made on jasper, chert, chalcedony, etc.; the collection being dominated by scrapers, blades being comparatively few; and Series III: (Mesolithic [4.5]) tools: blades, points, scrapers, awls, etc.

IAR 1957-8.

Manju-Khera (29°42'; 74°28'), Dt Hissar. RANG MAHAL [11.24] site.

IAR 1967-8.

Manmangalam, Dt Tiruchchirappalli. Megalithic [4.17.9] site with cairn circles. Stone circles without much fillings and slab-cists with port-holes surrounded by stone circles have also been noticed.

IAR 1961-2. Gururaja Rao, B.K., 1971, in *Prof. Nilakanta Sastri Felicitation Vol.*, Madras.

Mannamkandam, Dt Kottayam. A number of dolmenoid cists [4.17.10].

IAR 1965-6.

Mannarghat, Dt Palghat. Megalithic [4.17.10] site with cists.

IAR 1968-9.

Mannur¹, Dt Bijapur [Chalcolithic] thick coarse grey ware with ribbon flakes [16.15.2] of chert.

IAR 1959-60.

Mannur², Dt Dharwar. Neolithic tools, probably of the Chalcolithic [4.14.8] complex, and early historical [4.18.11] site. See HANDIGNUR.

IAR 1958-9; 1967-8.

Manohar, Dt Bankura. Microliths (of unspecified nature).

IAR 1960-1.

Manoli, Dt Belgaum. Lower Palaeolithic [4.2] site.

Joshi, R.V., 1955, *Pleistocene Studies in the Malaprabha Basin*, Poona, p. 23.

Manari, See KANDIVLI.

Manori-Renapur, Dt Ahmadnagar. Series II (Middle Palaeolithic [4.3]) remains, painted ware with microliths and fluted cores, also dull and red-slipped pottery of the early historical period [4.18.11].

IAR 1958-9.

Manot, Dt Hoshangabad. Scrapers (of unspecified affiliation).

IAR 1960-1.

Manoti, Dt Mandsaur. The site showed seven successive Pds. The early pottery of the site fell into: (i) black-and-red ware with paintings on the inner surface recalling the corresponding were from AHAR² and NAGDA; (ii) red ware with black paintings; (iii) the same ware in fine fabric in shapes akin to those of the late Phase of LOTHAL; and (iv) coarse black ware. Kayatha Ware [11.7] is also reported. The succeeding Pds belonged to the early historical to medieval ages with occasional breaks in between.

IAR 1958-9; 1959-60. Wakankar, V.S., 1976, in *Arch. Congress & Seminar 1972*, Kurukshetra, p. 58.

Manpur¹, Dt Bulandshahr. OCW [11.5] and potsherds of Harappa [11.3] affinities were found, as also a flat celt, a shouldered celt and a hooked sword [4.11].

AI, 7, 1951, p. 38A. IAR 1960-1.

Manpur², Dt Panch Mahals. Mesolithic [4.5] site.

IAR 1972-3.

Manslapur, Dt Raichur. Site with ash-mound [14.3].

AR Hyderabad Arch. Dept., 1937-8, p. 7.

Mantasale, Mantralayam, Dt Kurnool. Late Stone Age (Mesolithic [4.5]) site.

IAR 1964-5.

Manthar, Dt Banas-Kantha. Painted red ware and incised decorated beads of bone, carnelian and terracotta.

IAR 1964-5.

Mantralayam, See MANCHALA.

Manua, Dt Sehore. Microliths from painted rock-shelters [13].

IAR 1963-4.

Manupur, Dt Ludhiana. Site with Harappa Ware [11.3].

IAR 1961-2, Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 122.

Manvi, Dt Raichur. Site with an ash-mound [14.3], a stone alignment [4.11] and early historical material [4.18.11].

Allchin, F.R., 1963, *Neolithic Cattle-keepers of s. India*, Cambridge, p. 66.

Manwa, **Manwan**, **Manwan-dih**, Dt Sitapur. Excavation revealed occupation from c. 500 B.C. to medieval times. At the lowest level was exposed a brick-lined well which continued in use in the three succeeding phases. Besides, two brick structures were found. The associated pottery was the NBPW [11.16]. The succeeding cultural phase represented the Śunga and Kushan periods. From the levels ascribable to the Gupta period were found terracotta figurines, both human and animal. The site was reoccupied during early medieval times.

IAR 1962-3; 1968-9; 1969-70.

Manwar, Dt Ujjain. Kayatha Ware. See 11.7.

Maori, See CHAMBAL VALLEY.

Mapalgaon, Dt Dhule. Late Stone Age (Mesolithic [4.5]) site.

IAR 1965-6.

Maradigi, Dt Belgaum. Neolithic [4.6.9] site.

IAR 1968-9.

Maragullu, Dt Kolar. Megalithic [4.17.8] burial site.

IAR 1969-70.

Marai-Kalan-Khurd, Dt Jabalpur. Microliths consisting of blades, crescents, scrapers and cores.

IAR 1958-9.

Maraiyur, Dt Idukki. Mesolithic [4.5] and Megalithic [4.17.10] site.

Thampi, S.P., 1976, in *Bull. Deccan College Res. Inst.*, 35, pp. 137-44.

Marakhamai, Dt Allahabad. Settlement of the Kushan period.

IAR 1969-70.

Marakkampatti, Dt Dharmapuri. Megalithic [4.17.9] tombs.

IAR 1965-6.

Maralabhavi, Dt Gulbarga. Middle [4.3] and Upper (?) Palaeolithic [4.4] sites.

Indian Antiquary, New Series, 4, 1979.

Maramangalam, Dt Tirunelveli. Megalithic [4.17.9] site.

ASI-AR 1902-3.

Marandahalli, Dt Dharmapuri. Megalithic [4.17.9] and

late historical [4.18.12] habitation site.

IAR 1969-70.

Maranghada, Dt Ranchi. Megaliths [4.17.4].

IAR 1965-6.

Maranghatu, Dt Ranchi. Megaliths [4.17.4].

IAR 1965-6.

Marari-Khurd, Dt Amritsar. PGW [11.14] site.

IAR 1962-3.

Maratavandlapalle, Dt Chittoor. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3]) tools.

IAR 1962-3.

Marattoni, Dt Tirunelveli. Prehistoric site (of unspecified nature).

Cammiade, L.A., *Gazetteer of Tinnevely Dt.* p. 408, ASI-AR 1936-7.

Marawa, See MURAWA.

Marayapalaiyam, Dt Coimbatore. Megalithic [4.17.9] cairn circles.

IAR 1961-2.

Marayapatti, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 1, 1, pp. 515-8.

Marayur, Dt Kottayam, Urn burial [4.17.10] site.

IAR 1965-6.

Marchahia, Dt Mirzapur. Painted rock-shelter [13]. (Same as following?).

IAR 1962-3.

Marchahwa, Dt Mirzapur. Painted rock-shelter [13]. (Same as preceding?).

Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad, p. 55.

Marchaiva Dih, Dt Deoria. Early historical site with NBPW [11.16] and grey and red wares.

IAR 1962-3, *Bharati*, 8, 1, 1962-3, p. 119.

Marda, Dt Chanda. Chalcolithic [4.14.6] site with buff or cream ware with thick curry lines painted in reddish-brown and polished black-and-red ware of the same fabric, polish and type as is found at many sites on the e. coast like SALIHUNDAM, Ghantasala and AMARAVATI.

IAR 1959-60.

Mardha, Dt Satara. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAR 1962-3.

Marellagunta, Dt Nellore. Early Stone Age (Lower Palaeolithic [4.2]) site in the Venkatagirieru valley.

IAR 1965-6.

Margal, Dt Kolar. Megalithic [4.17.8] site.

Indian Antiquary, 11, 1882, pp. 86-8.

Marhanwala (30°50'; 76°45'), Dt Ambala. Unifacial tools of the Early Soan tradition [4.2] were collected from Terrace 2 of the SIRSA near Marhanwala. At Marhanwala itself two sites yielding OCW [11.5] were located.

IAR 1971-2.

Mariado¹, Dt Damoh. Lower and Middle Palaeolithic [4.2, 3] site.

AI, 17, 1961, pp. 5-36.

Mariado², Dt Dhule, Series I (Lower Palaeolithic [4.2])

and Series II (Middle Palaeolithic [4.3]) tools.

IAR 1958-9.

Marigan, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1962-3.

Marigudem, Dt Chanda. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1961-2.

Marihal, Dt Bijapur. Thick coarse grey ware with ribbon flakes [16.15.2] of chert (evidently Chalcolithic [4.14.8]).

IAR 1958-9.

Mari-ka-Kot, Dt Ghazipur. Black-slipped Ware [11.13] and red ware.

Bharati, 8, 1, 1964-5, p. 125.

Marikavalasa, Dt Visakhapatnam. Mesolithic [4.5] site.

Jour. Andhra Historical Res. Soc., 35, pp. 323-6.

Mari-Panwan, Dt Gurdaspur. Early historical remains. See ACHAL-SAHEB.

IAR 1961-2.

Mariyalam, Dt Dharmapuri. Megalithic [4.17.9] sites with dolmenoid cists and stone circles.

IAR 1967-8.

Marjadpura, Dt Banda. Polished stone celts, with pointed butt, splayed edge, convex sides and lenticular cross-section, of Neolithic [4.6.3] affiliation.

IAR 1955-6.

Markanda valley, A tributary of the GHAGGAR, the Markanda rises at Baraban in the hill of Katasan pass below a temple of Katasan Devi and after flowing from s.-e. to s.-w. for a distance of about 24 km within Dt Sirmur reaches Dt Ambala at Kala Amb where it is quite wide. The channel of this river, a sluggish perennial stream, shallow and always fordable, is of varying width from place to place. Its only tributary of any importance is the Salani. In the upper reaches around Uttamvala the river cuts through thick fan deposits the exposed sections of which are very high at places. In the lower course it flows through the tilted Siwalik formations, exposing the rock cliffs on both banks. Downstream Kala Amb when the river leaves the Siwalik hills the valley broadens at its confluence with the Ghaggar. The Markanda captured the headwaters of the Bata, a tributary of the Yamuna, during the Pleistocene [9.8.2].

A flight of terraces [9.9] has been noticed along the entire course of the river. In the upper-reaches the terraces are of cut-and-fill type while in the lower course they are rock-cut. Nearly five non-paired terraces can be distinguished at heights of about 50, 30, 18, 15 and 5 m respectively above the present river bed. Of these the terraces at 18 m (Gagal terrace) is the most extensive. The occurrence of terraces at various heights is a clear evidence that the river flowed at these heights at different times. The terraces are composed of river gravel and silt and lie on different geological formations of the

area: Nahans or Tatrot, Pinjor or Boulder Conglomerate of the Siwalik system. The thickness of these moderately cemented and channel-bar gravels varies from 3 to 5 m. The entire sequence of terraces is post-Siwalik, i.e., mostly Middle Pleistocene, though due to lack of fossil evidence in the terrace deposits their precise age cannot be determined. No evidence of Pleistocene glaciation has been found.

Near GAGAL (32°5'; 76°15') on the 18 m terraces (Gagal surface) as well as on the lower terraces a few Lower Palaeolithic tools [4.2], mostly comprising unifacial choppers on pebbles and two or three pebble flakes of quartzite, have been found on the surface, there being no handaxe or cleaver anywhere in the valley. In this collection a bifacially worked scraper on an oval flake from pebble shows advanced Acheulian characters [16.15.1].

The Markanda valley is famous for its rich fossils from the Siwalik formations (Late Pliocene to Early Pleistocene) and a field museum has been organized by the Geological Survey of India at Saketi.

Himachal Pradesh Dt Gazetteers, Dt Sirmur, 1969, Joshi, R.V., Rajaguru, S.N., Badam, G.L., & Khanna, P.C., 1975, in *Current Science*, 44, 13, pp. 464-5. —R.V. JOSHI

Markandeya, Dt Shahdol. Tools of the Early and Middle (Lower and Middle Palaeolithic [4.2, 3]) Stone Ages.

IAR 1962-3.

Markapur, Dt Kurnool. Site on the Gundlakamma with Series I and II (Lower and Middle Palaeolithic [4.2, 3]) tools. There are also megaliths [4.17.7].

IAR 1959-60.

Markkayangottai, Dt Madura. Megalithic [4.17.9] site, with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Mark Saketi, Dt Sirmour. Lower Palaeolithic [4.2] site. Verma, B.C., 1975, in *Jour. Geological Soc. India*, 16, 4, pp. 518-21.

Markundi, Dt Banda. Painted rock-shelter [13].

Misra, V.D., *Some Aspects of Indian Arch.*, Allahabad, p. 54.

Marnhal, Dt Gulbarga. Megalithic [4.17.8] site.

Jour. Geological Survey of Hyderabad, 4, 1, p. 157.

Marod, Dt Indore. Microliths (of unspecified nature) in association with black-and-red, black-and-cream and grey wares.

IAR 1961-2.

Maroli, Dt Nagpur. Middle Palaeolithic [4.3] and Mesolithic [4.5] site.

IAR 1961-2.

Marripadu, See BOGGERU VALLEY.

Martahalli, Dt Mysore. Megalithic [4.17.8] cist burials.

IAR 1961-2.

Marudapalli, Dt Dharmapuri. Site with dolmenoid cists [4.17.9].

IAR 1965-6.

Marvania, Dt Palamau. Rich microlithic site yielding a large number of geometric and non-geometric tools such

as lunates, burins, points and blades. A few Upper Palaeolithic [4.4] blades were also picked up.

IAR 1959-60.

Marve, See KANDIVLI.

AI, 6, 1950, p. 7.

Masala-buzruk, Dt Chanda. Series I (Lower Palaeolithic [4.2]) site.

IAR 1959-60.

Masalarith, Dt Chanda. Painted sherds of the Chalcolithic tradition [4.14.6] were found together with a number of microliths.

IAR 1959-60.

Masali Khurd, Dt Bijapur. Neoliths [4.6.9] and painted black-on-red Chalcolithic [4.6.8] pottery. See DULAKHEDA.

IAR 1957-8.

Masangeri, Dt Bijapur. Microliths (of unspecified nature).

IAR 1961-2.

Masania, Dt Ganganagar. PGW [11.14] and RANG MAHAL [11.24] Ware. See SARASVATI VALLEY.

Unpublished.

Masanjore, Dt Santal Parganas. Tools of Series III (Mesolithic [4.5]) were collected from the bed of the Mayurakshi.

IAR 1960-1.

Masaon, **Masaon Dih**, **Mason**, (25°10'; 82°25'), Dt Ghazipur, 1 km away to the e. of Aurihar railway station, explored by A.C.L. Carleyle (*ASI-AR*, 22) in 1879-80 and referred by A. Führer in 1891 (Führer, 1891). On the basis of the inscription found on two sculptured stones during his excavation at Joharganj, 1½ km to the s. of Masaon, where he claimed to have found uninterrupted occupation from the prehistoric to recent times, the former represented by a stone celt. Carleyle suggested that this site was the capital of Krelulendra. Two thin square copper coins bearing the inscription *Dhanadevasa* also led him to suppose that the settlement was founded by Dhanadatta and that the original name of this place might be Dhanapura.

A vertical excavation at Masaon undertaken by the writer on behalf of the Sampurnanand Sanskrit University in 1964-5 (*IAR* 1964-5, p. 42) revealed four successive occupational Pds ranging in date from early 600 B.C. to A.D. 600, there being no evidence of any post-Gupta occupation. Pd I, from 600 to 300 B.C., consists of two phases, easily distinguishable from each other by the absence of the NBPW [4.18.1] in the earlier phase and its profuse presence in the later. The other pottery includes the grey ware, Black-slipped Ware [11.13] and red ware in fine as well as ordinary fabric. Among the other important finds are punch-marked coins [3.1], a copper mirror [18.5], archaic human terracottas with applied designs, bird and other animal terracottas [17.1], bone points, circular terracotta discs

[6.7.3], objects of games and beads.

In the later phase structural remains in the shape of baked-brick walls and rammed floors have been exposed. Several ring-wells [14.15] also belong to this phase.

Pd II, 200 to 50 B.C., is marked by the gradual degeneration of the NBPW, grey ware and Black-slipped Ware. The appearance of the terracottas of the Śunga style [17.2] bearing typical head-dresses resembling the turban with a knot is the chief feature of this Pd. Among the other important finds are punch-marked coins, gamesmen, beads, animal figures, antimony rods [18.1], copper bangles and hooks. Structural remains are represented by well-arranged brick walls and rammed floors presenting a rough plan of a house.

Pd III has been assigned to the Kushan age, A.D. 100 to 250, on the basis of several copper coins of Kanishka and Huviska. Typical human terracottas betraying foreign features are significant. A small stone figure of a goddess, a copper mirror and seals and sealings [3.2] are the important finds. Baked-brick structures well oriented to the cardinal directions representing a house and floors have come to light.

Pd IV, A.D. 250 to 600, is clearly identifiable by seals and sealings, fine terracottas consisting of several human heads with beautiful hair styles and figures of monks and nuns. Of the terracottas a beautiful lady holding a pitcher is the finest specimen. Terracotta discs bearing symbols like trident, deer and *svastika*, have also been found in this Pd. Terracotta balls, shell bangles, antimony rods, gamesmen, daggers, spear points, small blades and clay pounders are the other finds. The structures are poor and are badly disturbed. Stray brick courses found here and there do not yield any plan.

Führer, A., 1891, *Monumental Antiquities & Inscriptions in the North-West Provinces*, Allahabad.—R.B. NARAIN

Masavi, Dt Ratnagiri. Megalithic [4.17] cairn of laterite rubble.

IAR 1966-7.

Mashalli, Dt Kolar. Megalithic [4.17.8] site.

Indian Antiquary, 2, 1873, pp. 86-8.

Maskanal, **Maskanel**, Dt Bijapur. Megalithic [4.17.8] stone circles. See DON RIVER.

IAR 1960-1.

Maski (15°57'; 76°38'), Dt Raichur, on the Maski nullah, a tributary of the Tungabhadra, in Lingsugur Taluka. The finds from this site were first seriously studied by Foote who visited it between 1870 and 1888 during his investigations of the geology of the Dt. The site, however, sprang into importance in 1915 with the discovery by C. Beadon, a mining engineer, of an edict of Aśoka, a version of his s. Minor Rock Edicts, which significantly mentions the name Asoka as its author. Subsequently the site attracted the attention of Munn, 1930, 1934, of the Hyderabad Geological Survey. During

1935-7 the Hyderabad State Arch. Dept conducted an undisciplined excavation at the site (Ahmed, 1938 and 1939). For a proper assessment of the evidence and for obtaining an ordered sequence a systematic excavation was undertaken in 1954 by the author on behalf of the ASI (*AI*, 13, 1957, pp. 4-142).

The site is located to the w. of the present village and is surrounded on three sides by gneissic outcrops, the largest of which is named as the Durgada-Gudda, bearing on its w. face towards the n. tip the inscription of Aśoka. Excavation conducted in different parts of the site afforded evidence of occupation belonging to four cultural Pds: Pd I, Neolithic-Chalcolithic [4.6.9]; Pd II, Megalithic [4.17.8]; Pd III, early historical [4.18.11]; and Pd IV, medieval.

Pd I represents essentially a Neolithic subsistence economy, as shown by the use of blades and microliths and ground stone implements. The material employed for the manufacture of the microliths and blades includes chert, agate, carnelian and opal. Among the types implements showing no secondary work, viz. parallel-sided blades, constitute nearly 78% of the total yield, including cores. Other forms include backed and serrated blades, lunates, trapezes, scrapers, points, etc. The restricted presence of copper, represented by a rod of indeterminate use from the mid-level of the Pd amongst an all-purpose use of stone, clearly indicates the slow infiltration of the metal in an essentially Neolithic economy. Amongst the other small finds are beads, variously of carnelian, amethyst, agate, chalcedony, coral, shell, glass and paste. The pottery, mostly plain, reveals two main industries—dull-grey ware and pinkish-buff ware, the latter showing a greater frequency in the lower levels. Besides, a painted ware, represented by over two dozen sherds, is also in evidence, though confined to the lower levels. The designs of linear patterns are executed in black over a red-slipped surface. A few sherds of dull-grey ware also show incised designs. Animal remains indicate the existence of the domesticated short-horned humpless cattle, buffalo, sheep and goat, with the larger number belonging to the cattle and sheep, of which obviously bigger herds were maintained.

In the present stage of our knowledge and in the absence of any objective dating evidence this Pd may be assigned to the last three quarters of the 2nd millennium B.C.

Pd II marks the sudden emergence of the megalith-building people and the introduction of iron. These combined traits provide the label for the Pd; viz. the Iron Age Megalithic culture. No fewer than five classes of burials [4.17] have been encountered in the excavation: B(i), pit burial with the longer axis along n.-s., containing on the pit floor an extended articulated skeleton

along with funerary furnishings like pottery and iron objects and without any lithic demarcation on the surface; B(ii), distinguished from B(i) by the e.-w. orientation of the longer axis and the fractional nature of the skeletal remains; B(iii), urn burial showing an urn containing fragmentary bones and a few pots along with smaller pots arranged on the outside; B(iv), pit circle, containing on the pit floor an extended articulated skeleton, covered over with stone slabs above the level of which is deposited the funerary pottery, the pit being demarcated on the surface by a circle of unhewn boulders; and B(v), pit circle, resembling those met with at BRAHMAGIRI, containing on the pit floor fragmentary bones along with iron objects and pottery and demarcated on the surface by a circle of unhewn boulders enclosing cairn. Among these, B(i) and B(iv) classes of burial are met with in the habitation area itself. Two menhirs forming part of rough alignments [4.17] have also been excavated but found to be unassociated with any funerary deposit.

Iron, a necessary adjunct of the culture, is well-represented in both the burials and the contemporary habitation deposits. The objects include lances, tanged arrowheads, ferrules and dagger blades. Copper also continues in use. Among other associated objects of this Pd mention may be made of beads of various materials, including one of gold, and terracotta gamesmen [6.7.2], marble, etc.

The notable feature of the pottery is the emergence of the patent Megalithic Black-and-red Ware [11.15.3], the all-black ware and the red-slipped ware. Of these the Black-and-red Ware is more predominant and along with the red-slipped ware is represented both in the burials and the habitation deposits; the all-black ware is conspicuous by its absence in the burials which may indeed be a coincidence, for many pots of this variety were obtained from the burials during the 1935-7 excavation. Some of the pots occurring both in the habitation deposits and in the burials have graffiti [20.1], of which 19 different marks have been identified.

Animal remains from the deposits of the Pd indicate the existence of the short-horned cattle and sheep. Pollen-analytical studies indicate a temperate climate.

This Pd can be assigned to the last three quarters of the 1st millennium B.C.

Pd III is distinguished by the introduction of coinage and the use of the Russet-coated Painted Ware [11.22]. The chief attribute of this pottery is the rich repertoire of linear patterns, rectilinear or criss-cross, executed in white with lime or kaolin paste under a russet-coloured ochrous wash. The occurrence of rim fragments of the distinctive Rouletted Ware [1.21] indicates the cultural interrelationship with other regions besides providing a dating evidence. Other wares current during the Pd are a

dull-red ware and a dark-grey ware: Notable among the small finds are beads and bangles of various materials, terracotta figurines and spools [6.7.3], flesh-rubbers [18.4], iron objects and an unidentified lead coin.

On the basis of datable finds the Pd may be assigned to the first three centuries of the Christian era.

The medieval occupation is noticed on the other side of the Durguda Gudda and is characterized by a distinctive burnished grey ware often decorated with multiple grooves and stamped and incised patterns, largely on the shoulders. Typical of this Pd are polychrome glass bangles. On the basis of coin finds and literary evidence the Pd can be assigned to c. 100-1600.

Ahmed, Khwaja Mohd., 1938, in *AR Arch. Dept 1935-6*, pp. 19-31; 1939, *ibid.*, 1936-7, pp. 14-16. Foote, R.B., 1914, *Indian Prehistoric & Protohistoric Antiquities*, Madras, pp. 179-83. 1916, *ibid.*, Madras, pp. 125-6. Munn, L., 1930, in *AR Arch. Dept Hyderabad, 1927-8*, pp. 26-7; 1934, in *Jour. Hyderabad Geological Survey*, II, 1, pp. 121-35.—B.K. THAPAR

Mason, Dt Ghazipur. See MASAON.

Massala-Tukum, Dt Chanda. Series I (Lower Palaeolithic [4.2]) site.

IAR 1959-60.

Masumpur, Dt Ballia. Site with NBPW [11.16].

IAR 1963-4.

Mat, Dt Mathura, 14 km n. of Mathura on the left bank of the river Yamuna. Excavation revealed remnants of a *deva-kula* and a large number of Kushan images including the famous image of Kaniška.

ASI-AR 1911-2.

Matamar, Dt Jabalpur. Microliths (of unspecified nature).

IAR 1959-60.

Mataur, Dt Meerut. Early historical [4.18.1] site.

IAR 1969-70.

Matbali, Dt Raichur. Site with stone artefacts, probably Chalcolithic [4.14.8].

AR Hyderabad Arch. Dept, 1935-6, p. 2.

Matchakolgiri, Dt Garo Hills. Neolithic [4.6.6] tools including Hoabinhian, cores, flakes, axes, adzes, hoes, long narrow celts, grinding stones and potsherds predominantly grey in colour were found.

IAR 1966-7.

Matchu-ka-Kot, Dt Ghazipur. Black-and-red ware (of unspecified nature).

IAR 1963-4.

Math Forest, Dt Purulia. Middle Stone Age (Middle Palaeolithic [4.3]) scrapers, blades, points, cores and flakes were picked up together with Late Stone Age (Mesolithic [4.5]) microliths—blades, lunates, scrapers, points, borers, burins and fluted cores.

IAR 1963-4; 1967-8.

Mathal, Dt Kutch. Middle Palaeolithic [4.3] site.

IAR 1967-8.

Mathan¹, Dt Ambala. BARA pottery SANGHOL I B affiliation.

Bisht, R.S., 1976, in *Arch. Congress & Seminar 1972*, Kurukshetra.

Mathan², Dt Ludhiana. Late Harappa [4.10] site.

IAR 1965-6. Suraj Bhan, 1975, *Excavation at Mitauhal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 122.

Mathana, Dt Sharanpur. Late Harappa [4.10] and OCW [4.12] site.

IAR 1967-8.

Mathula, Dt Ganganagar. Harappa [4.9] site. See SARASVATI VALLEY.

(Unpublished.)

Mathura (27°31'; 77°14'), headquarters of the Dt of the same name, situated on the Yamuna, a city with a long history as a political centre from early times till at least the early centuries of the Christian era, attaining the height of its importance during the time of the Kushans, whose capital it was. To a greater degree its importance is due to its being the reputed birth-place of Kṛṣṇa, which has made it supremely important to Vaiṣṇavism, but it was also a great centre of Buddhism and Jainism—a fact fully represented by the sculptures of the place. In the 1st and 2nd centuries the ateliers of Mathura created a distinctive sculptural style of their own and sent out their products far and wide, not to speak of enriching the local shrines. No less distinctive is its terracotta art [17], which had a somewhat earlier origin. With the discovery in 1836 of a sculpture labelled as 'Silenus' the rich antiquarian remains of Mathura attracted art-collectors and archaeologists, whose activities have enriched as well as done untold harm to archaeology. Various localities in the city and its neighbourhood were off and on taken up for rifling and haphazard digging from about the middle of the last century by Cunningham, Growse, Burgess, Hardinge, Führer, Vogel, Radha Krishna and others (Vogel, 1910). Their work, though turning out in immense numbers stone sculptures, terracottas, coins and inscriptions of great value for the chronology particularly of the Kushans and for the history of the religious sects, was primarily directed to the collection, without systematic records, of antiquities and hardly contributed anything to the knowledge of the archaeological history of the city.

It was only in 1954-5 that M. Venkataramayya and B. Saran of the ASI obtained a cultural sequence of the Katra mound, an extensive habitation site, ranging in date between 600 B.C. and A.D. 600, according to their estimate (*IAR 1954-5*, p. 15). Further excavations were conducted by the writer on behalf of the ASI at about 14 sites from 1973-4 to 1976-7 with the principal objective of examining the antiquity, growth and character of historical Mathura. As a result a sequence of the following cultural Pds has been obtained: Pd I, from c. 6th to the closing decades of the 4th century B.C.; Pd II, from the closing decades of the 4th century to c. 200 B.C.; Pd III, from c. 200 to about the end of the 1st century B.C.;

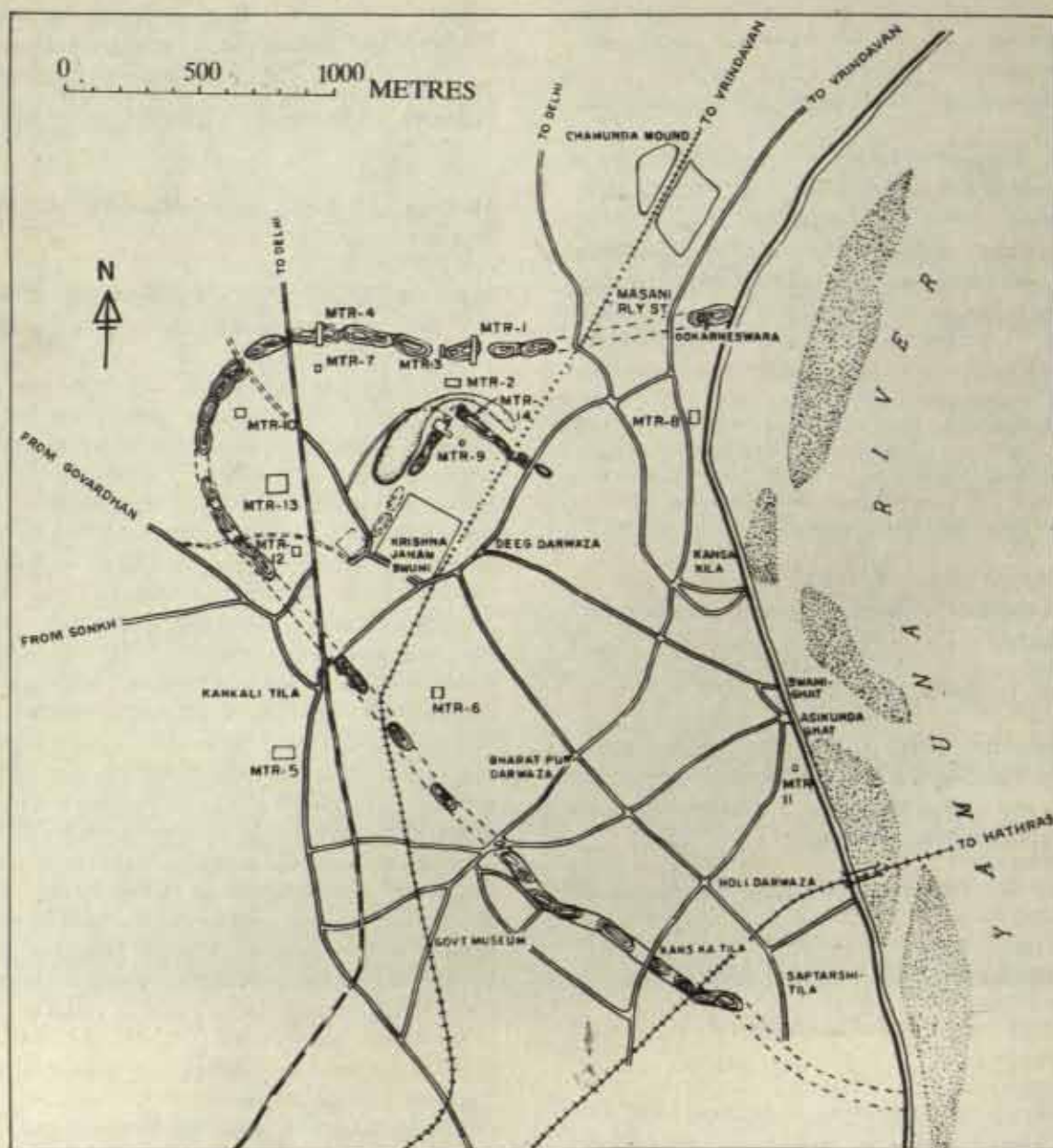


Fig. 13 Mathura: Ancient fortifications.

Pd IV, from the beginning of the 1st to about the 3rd century; and Pd V, from c. the 4th to about the close of the 6th century. (Others believing in an earlier origin of the PGW, present in Pd I, if HASTINĀPURA, would ascribe an earlier date to the beginning of Pd I.)

In a small trench about 100 m to the w. of the Yamuna later deposits including mud and lime floors and glazed pottery have also been found.

The available evidence suggests that the earliest settlement, of the size of perhaps a small hamlet (Pd I), began around Ambarish-tila in the n. part of the present town. During Pd II this habitation turned into an exten-

sive settlement, roughly 3.5 sq km in area, fortified by a massive mud wall (Dhulkot), forming a longish crescent on plan on three sides, with the Yamuna on the e. The mud fortification, however, lost its utility in Pd III but was revived, enlarged and repaired in Pd IV. During the latter Pd itself was built an inner enclosure of fortification of mud now represented by a long elevated earthen pile in the Katra area.

Pd I is marked by the presence of the PGW [11.14] and associated pottery and consists of two phases, I A and I B. Phase I A, beginning right on the natural soil, is characterized by two structural levels, the earlier rep-

resented by a mud floor with post-holes and the latter by a partially extant mud platform. Besides the PGW the ceramic industry is represented by the red ware, some sherds of the Black-slipped Ware [11.13] and a few fragments of an inferior variety of the black-and-red ware [11.6.3], besides some plain grey ware. The PGW consists of the bowl and dish of the usual forms and fabric with paintings in black and in some cases in white. A few interesting designs besides the already known ones on the pots include groups of parallel horizontal lines between two verticals, latticized frames and a hook-shaped curve around spirals. The other notable finds comprise: terracotta discs of plain and decorated variety; *ghata*-shaped beads; fragment of a conch; a bone arrowhead; a terracotta amulet; and two broken *styli*.

Phase I B does not show any major change in pottery except for the appearance of a few sherds of the NBPW [11.16], of which three, of one or more vases, with somewhat thicker section than usual, have a steel-black lustrous exterior and unslipped red interior. Some new designs met with in the PGW bowls consist of herring-bone pattern, two groups of oblique lines forming an apex and dots within circlets. Other important finds from this phase are: an ear stud of translucent greenish glass; terracotta gamesmen [6.7.2]; bone arrowheads; figurine of a terracotta bird; a torso and a decorated hind part of an animal; an unperforated gadrooned bead; *ghata*-shaped beads; and a terracotta disc.

Pd II is distinguished by the use of the NBPW and associated pottery, including plain grey ware. The chief structural feature of the Pd is the construction of mud fortifications around the settlement. In a cutting across Dhulkot two distinct phases of fortification have been encountered. On the basis of the find of sherds of the NBPW and of Mauryan terracotta figurines [17] and a copper punch-marked coin [3.1] in the make-up of the fortification its construction may be ascribed to the early part of Pd II. Originally with a height of about 6-50 m the mud defence wall is built of several compact fillings of earth and *kankar* over the undulating ground. The other structural activity of the Pd is represented by compact mud platforms and mud floors associated with ring-wells [14.15]. In one case the sides of the platform are found to be faced with baked brick of large size. Remains of dislocated soakage jars, probably forming a drain, have also been noticed.

The important antiquities of the period comprise: a few punch-marked coins of copper; terracotta human and animal figurines; toy wheels [6.19]; gamesmen; decorated discs; bangles and beads of semiprecious stones and bone; and bone arrowheads. Among the figurines special mention may be made of: a damaged head of an elephant with a lustrous slip bearing paintings in

the NBPW tradition; several types of mother goddess figurines [12.6]; and terracotta figurines of monkeys, elephants and a *vr̥ṣavyāla*, mostly in grey colour and sometimes with a blackish slip or paint. Another significant find is a miniature pot containing 24 beads perhaps of amethyst and topaz.

Pd III marks the last phase of the NBPW and shows a greater popularity of utilitarian forms. Other ceramics consist of both the plain grey of the earlier tradition and red wares. The grey ware is represented by the dish with a dark slip and the red ware by the bowl, lid, the vase of various shapes, storage jar, basin, etc.

The structural remains, available mostly only on plan, are built of both mud and baked and unbaked brick. The early levels of the Pd show constructional activity in mud medium, represented by mud platforms and rammed floors, in some cases finished with a layer of *sarkhi*. It is only in the middle and upper levels of this Pd that baked brick (39 to 40 × 24 × 5 cm) is freely used in constructions. The important structures include mud platforms, which seem to have served as the base of houses, a room with a brick-on-edge border and an extensive brick floor finished with lime plaster, besides some channel-shaped ovens. Some of these structures appear to be for communal use. Earthen tiles seem to be the common roofing material. The existence of structural remains and a large number of broken and discarded pots over the mud fortification suggest that the defence wall had lost its utility in this Pd.

The important finds of the Pd include: terracotta plaques depicting females, a lute-player and an amorous couple; a terracotta bullock-cart and toy-cart frames [16.17]; seals and sealings [3.2]; tribal coins [3.1]; beads of terracotta and semiprecious stones; shell and terracotta bangles; copper objects, including thin and short rods with thickened ends; and a forepart of a lion figure in stone.

Pd IV witnessed a major constructional activity, as indicated by the construction of a huge water-reservoir complex, an inner fortification wall, remains of walls in mud and baked brick, mud floors with ovens and a baked-brick drain. The mud fortification of Pd II was not only revived but enlarged. From the fillings of the second phase stamped pottery, mainly grey and associated wares, have been collected, besides Kushan coins.

At Kankali-tila, the site of an ancient Jaina *stūpa* (Mitra, 1974, pp. 49-68), another impressive water-reservoir complex with four phases of construction has been exposed. Of the first phase only a few basal courses of brick are extant, the major portion of the superstructure, indicating an almost wholesale reconstruction, belonging to the second phase. A ramp was constructed in the third phase and some irregular structures

in the fourth. Made of baked brick of various sizes ($40 \times 25 \times 5$ cm, $30 \times 26 \times 4$ cm and $30 \times 17 \times 5$ cm), the reservoir is dug into the natural soil to a depth of 3.96 m. On plan a rectangle, it has a ramp in the e. side and irregularly oblong ancillary compartments along its n. and s. sides. On top of its n. wall a stone channel is provided as an inlet for filling it up with water. Near the outer end of the ramp leading to the tank has been exposed a well which had become sealed up as a result of the extension of the passage attached to the ramp. The first constructional phase of the tank can be ascribed to around the first half of the 1st century A.D.

A cutting across the long elevated earthen pile in Katra area, later identified as an inner fortification, has revealed that it was raised on the structural remains of the previous Pd by the provision of packings of wet mud and clay lumps in an oblique fashion, strengthened by a retaining wall of discarded bricks, brickbats, tiles and burnt clay lumps along the outer edge. The width and height of the retaining wall vary from 22 to 40 cm and 80 cm to 1 m respectively. The maximum basal width of the inner fortification is about 17 m. At its base on the outer side have been found remains of animal bones and ash in a pit, but its ritualistic association cannot be determined with certainty. The bastions of the inner fortification were probably semicircular.

The ceramic industry of this Pd is characterized by the presence of the sprinkler [11.23]; incense-burner [12.2]; basin; bowl; jar with plain and decorated spouts; a handle decked with a female figure; pot with plain and decorated exterior, showing painted and stamped designs; and a stamped amphora handle. The stamped designs consist of traditional auspicious symbols such as *tri-ratna*, *śrīvasta*, *śunkha*, fish, swans, floral motifs, circles, spirals, etc.

Amongst other notable antiquities mention may be made of: terracotta votive tanks [12.11]; seals and sealings; coins; bone points; skin-rubbers [18.4]; animal-headed gamesmen; spindle whorls [6.25]; and human and animal terracotta figurines, prepared out of single or double moulds, including that of a *yakṣī* in the typical Mathura art tradition. Other interesting terracotta figurines consist of: *vāmanakas*, a few bearing a glazed coat; a Śaka or Kushan soldier; a princely male; females including a foreign lady; *nāgas*. Bodhisattva Maitreya(?); and Gaja Lakṣmi. Notable specimens of stone sculptures comprise: two stelae, depicting scenes from the life of Buddha; a flaming Buddha image; a head of royal statue with several tiny Buddha figures on the crown; a head with moustache, curly hair and *śikhā*, most probably of Kubera; forepart of an elephant with inscription reading *suguspakasya* (?) and a lion; a *śālabhañjikā* figure and fragments of *sūcis*. Other interesting antiquities include a human-shaped pendant

with a peculiar interesting head-dress and beads of semiprecious stones and terracotta.

Two stone inscriptions, one of the 5th year of Kanīṣka I, referring to a gift of a lady named Visākhamitrā, and another of Huviṣka of the 50th(?) year recording probably a donation to the Dhānyavarma-vihāra, are among the significant discoveries of this Pd.

Pd V is characterized by the presence of mud platforms with traces of structures on the top and floors of mud and *sarkhi*. The pottery of this Pd consists of: the bowl; basin; vase; sprinkler of cruder variety; and painted and moulded pottery with artistic decoration. The important antiquities include: Buddha heads in typical Mathura art tradition; an image of Visnu with head missing; fragments of a *prabha-maṇḍala*; terracotta figurines in Gupta style; and the embossed figure of Ganga on a sherd.

Mitra, D., 1974, in Ghosh, A., ed., *Jaina Art & Architecture*, I, New Delhi (for Kankali-tila). Vogel, J. Ph., 1910, *Catalogue Arch. Museum of Mathura*, Allahabad (for account of previous explorations).—M.C. JOSHI

Mathuravad, Dt Visakhapatnam. Neolithic [4.6.8] and Mesolithic [4.5] site.

Jour. Andhra Hist. Res. Soc., 35, pp. 323-6.

Mathwagha, Dt Bharuch. Early historical [4.18.2] site. IAR 1966-7; 1967-8.

Mati Kisanpur, Dt Kanpur. Sherds of NBPW [11.16] were found at the site, 45 km from Kanpur on the Kanpur-Kalsi road.

IAR 1955-6.

Matin-Mahadev, Dt Shahjahanpur. Historical site yielding many Muslim copper coins and a Kushan one, beads of carnelian, agate, crystal, paste and glass and several terracotta figurines.

IAR 1965-6.

Matkandevanahalli, Dt Bijapur. Microliths (of unspecified nature) and Series II (Mesolithic [4.5]) tools. See DON RIVER.

IAR 1960-1.

Matki-Jharauli, Dt Saharanpur. Harappa [4.9] and OCW [4.12] site.

IAR 1966-7.

Matria, Dt Panch Mahals. Late historical [4.19.2] site. IAR 1971-2.

Mattakari, Dt Madurai. Late Historical [4.19.10] site. IAR 1958-9.

Mattavara, Dt Chikmagalur. Megalithic [4.17.8] site with cists.

Seshadri, M., 1956, *Stone-using Cultures of Pre- & Proto-historic Mysore*, London, p. 60.

Mattewal, Dt Amritsar. Early historical [4.18.1] site with Black-slipped Ware [11.13] and plain red and Suṅga-Kushan wares.

IAR 1963-4; 1964-5.

Mattukaranchavadi, Dt Pondicherry. Megalithic [4.18.9] site.

Casal, J.-M., & C., 1956, *Site urbain et Sites funéraires des Environs de Pondichéry-Virampatnam-Mouthrapalaeon Soutonkeny*, Paris.

Matupur, Dt E. Nimar. Palaeolithic and microlithic (both of unspecified nature) tools.

IAR 1959-60.

Matur, Dt Warangal. Neolithic [4.6.8] pointed-butt polished stone axes.

Jour. Asiatic Soc. Bengal, 56, 2, 1887.

Mau, Dt Banda. The section on the right bank of the Yamuna showed the following sequence: (i) detrital formation yielding a few Early Stone Age (Lower Palaeolithic [4.2]) artefacts, (ii) yellowish clay, (iii) whitish clay, (iv) reddish dark-brown clay, (v) light-brownish clay, (vi) white clay, and (vii) dark-brown clay.

IAR 1968-9.

Mau-Buxur, Dt Gorakhpur. Black-and-red ware (of unspecified nature).

IAR 1963-4.

Mau-Buzurg, Dt Gorakhpur. Site with NBPW [11.16].

IAR 1963-4.

Maudiaon, Dt Lucknow. Site with NBPW [11.16] and grey ware.

IAR 1961-2.

Mauima, Dt Allahabad. Settlement of the Kushan period.

IAR 1969-70.

Mauja Kheda, Dt Hissar. Mauja Kheda-I and-II (Thedhi) yielded RANG MAHAL Ware [11.24].

Silak Ram, 1972, unpublished thesis, Kurukshetra Univ.

Maule Bhasan, Dt Buidana. Mound with beads of various materials belonging to the Maurya period.

IAR 1969-70.

Maur-Khurd, Dt Meerut. Śunga-Kushan assemblage and medieval wares.

IAR 1962-3.

Mavathur, Dt Mysore. Megalithic [4.17.8] cist burials.

IAR 1961-2.

Mavilayi, Dt Cannanore. Rock-cut caves, possibly Megalithic [4.17.10].

IAR 1960-1.

Mavinbhavi Dt Bijapur. Microliths (of unspecified nature).

IAR 1961-2.

Mavlipada, Dt Surat. Early, Middle (Lower, Middle Palaeolithic [4.2, 3]) and Late Stone Age (Mesolithic [4.5]) site.

IAR 1967-8.

Maya-Kund, Dt Dehra Dun. Red ware of the Śunga-Kushan assemblage.

IAR 1965-6.

Mayaluru, Dt Kurnool. Early historical site. [4.18.11].

IAR 1964-5.

Mayapur, Dt Saharanpur. OCW [11.5] and red ware of Śunga-Kushan assemblage.

IAR 1965-6.

Mayoli Khera, Dt Kurukshetra. Harappa [4.9] and early

historical [4.18.1] site.

Suraj Bhan, & Shaffer, J.G., 1978, in *Man & Environment*, 2, p. 62.

Mayppayur, Dt Kozhikode. Rock-cut caves [4.17.10] with Black-and-red Ware [11.15].

IAR 1964-5.

Medhi, Dt Mandla. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1961-2.

Medleri, Dt Dharwar. Early historical site. See ANVERI.

IAR 1959-60.

Meen, Dt Ujjain. Chalcolithic [4.14.5] site with Kayatha Ware [11.7].

IAR 1966-7; 1968-9.

Meghwari, Dt Amravati. Series II (Middle Palaeolithic [4.3]) tools and microliths (of unspecified nature).

IAR 1960-1.

Megnanapuram, Dt Tirunelveli. Mesolithic [4.5] site near of Kudiraimoli *teri* [9.5]. The collection of tools includes hammer-stone, flakes, discoids, chopping tool, scraper and simple point. See SAWYERPURAM.

AI, 12, 1956, p. 8.

Megur-Asoti, See MALAPRABHA VALLEY.

Mehada, Dt Gorakhpur. Black-and-red ware (of unspecified nature).

IAR 1963-4.

Mehara-Buzurg, Dt Bhind. NBPW [11.16] and black-and-red ware.

IAR 1958-9.

Mehawa-Kheri, Dt Ambala. Site with PGW [11.14].

IAR 1964-5. Suraj Bhan, 1975, *Excavation at Mitthal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 123.

Mehbubpur, Dt Ambala. Site with PGW [11.14].

IAR 1964-5.

Mehenduri, Dt Ahmadnagar. Tools of Series II (Middle Palaeolithic [4.3]) and occasionally of Series I (Lower Palaeolithic [4.2]).

IAR 1959-60.

Meghum, Dt Bharuch, on the estuary of the Narmada, an eroded late Harappa [4.10] site excavated in 1957 by S.R. Rao of the ASI. A small burial pit enclosed by *pise* and containing two high-necked jars, a dish-on-stand and a flat dish was found, besides ceramics like the jar with raised neck painted in black over red, dish with beaded rim, dish-on-stand and bowl, a carnelian bead and a terracotta biconical bead. Microlithic (Mesolithic [4.5]) tools equatable to those of RANGPURA I were also found.

IAR 1957-8; 1959-60. Rao, S.R., 1962 & 1963, in *AI*, 18 & 19, p. 189.

Mekalavandlapalle, Dt Chittoor. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1962-3.

Mekpar, Dt Kutch. Historical site. See AJMEL.

IAR 1965-6.

Melaiyur, Dt Thanjavur. Early historical [4.18.12] site.

IAR 1961-2; 1965-6.

Melakuyilkudi, Dt Madurai. Megalithic [4.17.9] site.

IAR 1957-8.

Melapperumpallam, Dt Thanjavur. See KĀVERĪPŪM-PATTINAM.

Melattanaiyam, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 1, 1, pp. 515-8.

Meli-Manjthi, Dt Junagadh. Site of the Kṣatrapa period. IAR 1963-4.

Melkunda, Melkundan, Dt Nilgiri. Megalithic [4.17.9] site.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras, p. 229.

Melmuri, Dt Malappuram. Megalithic [4.17.10] site with stone circles, a rock-cut cave and umbrella stones.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras, IAR 1970-1.

Melperumballam, Dt Thanjavur. Early historical [4.18.12] site.

IAR 1961-2.

Melumalai, Dt Dharmapuri. Megalithic [4.17.9] burial sites.

IAR 1969-70.

Melur, Dt Nilgiri. Megalithic [4.17.9] site with two principal groups of 'cromlechs' and another detached one. In the middle of the groups is a small barrow.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Melur², Dt Pudukkottai. Megalithic [4.17.9] site.

Rep. State Museum, Pudukkottai, 1942-43, pp. 6-7; 1943-4, pp. 7-9.

Memunda, Dt Kozhikode. Rock-cut caves, possibly Megalithic [4.17.10].

IAR 1960-1.

Menasgi, Dt Dharwar. Polished stone axes, microliths and fragments of grey ware of BRAHMAGIRI fabric.

IAR 1967-8.

Mengalam, Pondicherry. Megalithic [4.17.9] site.

Casal, J.-M., & C., 1956, *Site urbaine et Sites funéraires des Environs de Pondichéry-Virampatnam-Mouthapaleon Souttokeny*, Paris.

Menskura, Dt Nellore. Lower [4.2] and Middle Palaeolithic [4.3] site.

IAR 1968-9.

Merhanwala, Dt Rupnagar. Harappa Ware [11.3] was found at the site, 21 km from Nalagarh. Later on OCW [11.5] was also found.

IAR 1954-5; 1970-1. Suraj Bhan, 1976, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 122.

Meroli, Dt Chittaurgarh. Black-and-red ware. See KADUKOTA.

IAR 1957-8.

Metgud (16° 15'; 75° 15'), Dt Bijapur. Lower Palaeolithic [4.2] site. See GHATAPRABHA VALLEY.

Mettubavi, Dt Coimbatore. Megaliths and cairn circles [4.17.9].

IAR 1962-3.

Mettu-Mahadanapuram, Dt Tiruchchirappalli. Megalithic Black-and-red Ware [11.15].

IAR 1962-3.

Mettupalaiyam, Dt Coimbatore. Megalithic [4.17.9] site with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Mettupalayam, Dt Chingleput. Megalithic [4.17.9] site.

AI, 22, 1966, p. 28.

Mettupalle, Dt Kurnool. Neolithic [4.6.8] ground stone axes, microlithic fluted cores [16.15.2], finished ribbon flakes, black-painted red ware and Megalithic Black-and-red Ware [11.15].

IAR 1963-4.

Metwas, Dt Ujjain. Historical site (of unspecified nature). See CHAMBAL VALLEY.

IAR 1971-2, p. 31.

Mevasa, Dt Kutch. Early historical [4.18.2] site.

IAR 1960-1.

Mewada, Dt Morena. Huge mound situated on the bank of the river Sip about 12 km upstream from its confluence with the Chambal, yielding black-on-red ware resembling that of the Malwa culture [4.14.5].

IAR 1972-3.

Mewasa, Dt Rajkot. Site with Red Polished Ware [11.23].

IAR 1957-8.

Mhasala, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1964-5.

Mhasdi, Dt Dhule. The cliff section on the river Panjra yielded Middle Stone Age (Middle Palaeolithic [4.3]) tools from the lowest gravel, flakes on jasper and agate from the middle gravel and a blade of agate from the upper gravel.

IAR 1963-4.

Mhase-Khurd, Dt Ahmadnagar. Tools of Series II (Middle Palaeolithic [4.3]), microliths (of unspecified nature) and sherds of thick grey ware.

IAR 1960-1.

Mhow, Dt Indore. A factory site of late Acheulian (Lower Palaeolithic [4.2]) tools near Patalpani waterfalls, 8 km south of Mhow. The tools consisted of cleavers, handaxes, ovates, scrapers and lance points.

IAR 1970-1.

Michimagiri, Dt Garo Hills. Early, Middle (Lower, Middle Palaeolithic [4.2.3]) and Late Stone Age (Mesolithic [4.5]) and Neolithic [4.6.6] site was found at Michimagiri-I, -II and -III.

IAR 1969-70; 1970-1.

Midigallu, Dt Anantapur. Megalithic [4.17.7] port-holed cists.

ASI-AR S. Circle, 1912-3.

Mikeri, Dt Nilgiri. Megalithic sites with barrows.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Minajgi, Dt Bijapur. Chalcolithic [4.14.8] habitation site. See BAGLUR.

IAR 1960-1.

Minakshayya's Easte, Dt Tumkur. Lower Palaeolithic [4.2] site s.-e. of Tumkur.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Mingdewadi, Dt Pune. Site of the c. Indian and upper. Deccan [4.14.5,6] Chalcolithic complex.

IAI 1962-3.

Minjhari, Dt Chanda. Lower Palaeolithic [4.2] site.

IAI 1960-1.

Minya, Dt Mysore. Neolithic [4.6.9] polished stone axes and Megalithic [4.17.8] cist burials.

IAI 1961-2.

Miragpur, Dt Saharanpur. PGW [11.14] site.

IAI 1965-6.

Mirapur, Dt Allahabad. NBPW [11.16] site.

IAI 1960-1.

Mirapuram, Dt Kurnool. Extensive Megalithic [4.17.7] site containing dolmenoid cists with port-holes.

IAI 1962-3.

Mirgichanda, Dt Purulia. Microliths (of unspecified nature) and historical remains.

IAI 1959-60.

Miriampalli, Dt Kurnool. Lithic tools (of unspecified nature) and megaliths [4.17.7] were found close together.

IAI 1959-60.

Miripur, Dt Ambala. PGW [11.14] site.

Suraj Bhan, 1976, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 123.

Mirkot, Dt Surat. Levalloisian flakes [16.15].

IAI 1969-70.

Mirapur, Dt Saharanpur. OCW [4.12] site.

IAI 1968-9.

Mirzapur¹, Dt Ambala. PGW [11.14] and NBPW [11.16] site.

IAI 1963-4.

Mirzapur², **Harnikalan**, (29°31'; 74°40'), Dt Hissar. RANG MAHAL [11.24] site.

IAI 1967-8.

Mirzapur³ (29°58'; 76°49'), Dt Kurukshetra, with a low small mound about 200 m to the e. of RAJA KARNA KA QILA, excavated by the Kurukshetra Univ. on a small scale from 1972 to 1976. The earliest habitation, 1 to 1.50 m in thickness belongs to the late phase of the Harappa culture [4.10] and is characterized by mud brick structures of three phases. Evidence of a fireplace, a refuse pit, an oven and a corn bin has been found inside a room. The other finds include: a large number and variety of beads in semiprecious stones, such as agate, crystal, jasper and carnelian and a few steatite disc beads; terracotta bangles, beads, discs, marbles, toy cart frames [16.17] (very rare), toy cart wheels [6.19], cakes, both circular and triangular [6.27], plain as well as painted bull figurines and a painted curved figure, probably of a snake; faience bangles, balls with incised decoration, beads and a beautiful figurine of stag with a

horizontal hole, probably used as an amulet; and copper objects including a complete spearhead without mid-rib, chisels, bangles, needles and a fragmentary object probably representing a *paraśu*; and stone hones [16.2], querns and pestles [6.19]. The pottery is represented by a sturdy red ware painted in light-black colour with geometric and linear designs and plant, fish and bird motifs. The painted designs and shapes are very similar to those from BARA, SANGHOL, CHANDIGARH, MITATHAL II B, DAULATPUR and BHAGWANPURA². A few sherds bear incised decoration on the interior comparable with that occurring on the pre-Harappa pottery of KALIBANGAN I. Classical mature Harappa shapes [11.6.1] such as the perforated jar and beaker are totally absent. The goblet too seems to be very rare.

After the late Harappa occupation the mound remained uninhabited for a long time and was re-occupied during the early historical period. The structural remains of this period comprise floors made of brickbats. The other finds are two terracotta moulds of punch-marked coins [16.10] and a few Kushan terracottas representing the typical art of that age. Sherds of the Red Polished Ware [1.23] were present.

Remains of the late medieval period characterized by scanty and shabby constructions in *lakhauri* bricks and brickbats are encountered just at the top. During this period the site was used as a graveyard which greatly disturbed the earlier remains.

—U.V. SINGH

Mirzapur⁴, Dt Meerut. PGW [11.14] and NBPW [11.16] site on the right bank of the Hindon.

Sharma, R.P., 1976, in *Arch. Congress & Seminar, 1972*, Kurukshetra.

Misri¹, Dt Bhiwani. Late Harappa [4.10] site comparable with MITATHAL II B.

Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 126.

Misri², Dt Mahendragarh. Late Harappa [4.10] site.

Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.

Mitathal (28°50'; 76°10'), Dt Bhiwani, about 10 km to the n.-w. of Bhiwani railway station, with a twin mound, the higher one in the e. and the lower one in the w., respectively called Mitathal-1 and Mitathal-2. Mitathal-1 measures approximately 150 × 130 m and rises to a height of 5 m, while Mitathal-2 is oblong with its longer axis being n.-s. and measures approximately 300 × 175 m in area and 3 m in height. The site was for the first time placed on the archaeological map by the discovery of gold Gupta coins in 1915-6. Two copper harpoons, the typical Copper Hoards tools [4.11], were accidentally discovered at the site in 1965, one of them now housed in the Arch. Museum at Gurukul, Jhajjar. Subsequently a hoard of 13 copper rings, since lost, was discovered. The true archaeological potential of the site and its Harappa affiliations were first recognized in 1967 when a few

potsherds and beads of semiprecious stones, paste and faience were shown to the writer, who conducted excavation here in 1968 on behalf of the Panjab Univ. Two trenches were sunk—one on the e. slope of Mitathal-1 and the other on Mitathal-2. The cultural deposits at the site are divisible into two Pds—I and II. The latter is again divided into two phases, A and B.

Pd I is characterized by the late SISWAL ware mainly comprising fabrics A and C of KALIBANGAN I through a few sherds of the other fabrics, B, D, E, and F, are also met with. The typical troughs of Fabric D, grooved on the interior, are represented by a few sherds found on the surface. A well-fired matt red ware of Fabric A in medium coarse fabric, turned on the wheel, includes the vase with out-turned rim, jar with wide mouth and bowl with convex or tapering sides. It is painted with a black band on the rim and neck. The use of white as the second colour characteristic of KALIBANGAN I or SISWAL A ware is absent. Fabric C is the most popular; the pottery is of well-levigated clay, wheel-thrown and well-fired, and bears a red slip resembling the Harappa [11.13] surface treatment. Vases with flaring or short out-curved rim are painted in black over light-red surface with linear and geometric designs. Besides a few sherds of handmade dough plates as well as a limited number of Harappa sherds of the dish, perforated jar, beaker and pointed vase also occur.

The structures are constructed of mud lumps and mud brick measuring $30 \times 20 \times 10$ cm and laid as headers. A structure of mud lumps survives only in two courses lining a pit cut into the natural soil of yellow silt. Layers of ash indicate the use of a thatched roof. Among the antiquities are included a single truncated biconical terracotta bead, painted clay bangles, sometimes several of them joined together, stone balls, querns and pestles [6.19] and a piece of copper ring.

In Phase A of Pd II the typical Harappa [4.9] twin-mound pattern of the settlement, preponderance of Harappa pottery, typical architecture, ornaments and objects of household use mark the advent of the full-fledged Harappa culture. The pottery and artefacts of the late SISWAL tradition however continue to remain in vogue indicating the co-existence of the two peoples.

The ceramic industry falls into two groups—the Harappa and the late SISWAL. The former comprises usually a plain ware sometimes painted with black bands over a light-red slip. The main shapes include: the storage jar; shallow dish-on-stand; dish; vase with pointed base; beaker; perforated jar; etc. The handled cup, S-shaped vase and ring-stand have not been met with. The late SISWAL ware occurs in fairly large quantities and has all the six fabrics, A to F. The township suddenly expanded on the dichotomous Harappa pattern as represented by the twin mounds. The solid mud-brick

walls, the size of the bricks and the staggered layout of the streets conform to the well-planned Harappa standards.

The small finds include a variety of beads of agate, carnelian, faience, steatite and terracotta. The fine manufacture of stone beads, careful cutting of the disc beads of paste and variety of decoration on the faience beads mark a high standard. An unfinished bead and an unworked nodule of agate from the site point to the local manufacture of the beads. However the long barrel carnelian beads, characteristic of the Indus valley, are absent, as also the typical paste beads. The large number of faience bangles with a rich variety of shapes and designs represent the popular ornament. The poor were perhaps contented to wear terracotta single or multiple joined bangles occasionally decorated with black strokes.

Among toys mention may be made of the terracotta cart wheels, wheeled animals, discs with nail marks and clay balls. A quartzite hammer-stone, saddle querns and pestles, discoid balls, perhaps used as weights, cubical chert and cuboid sandstone weights [6.29], chert blades and ring stone comprise the stone artefacts. A bone or ivory stylus or pin, a ring and a square wire of copper and terracotta triangular cakes [6.27], discs with tapering sides and sling balls have also been recovered.

Phase B of Pd II is distinguished by pottery evolved from Phase A, marked by a continuous deterioration in the manufacture, treatment and decoration. It comprises the Harappa and the late SISWAL traditions. The characteristic Harappa shapes such as the goblet, beaker, S-shaped vase, pyriform jar and perforated jar went out of use or became scarce. The common types such as the storage jar, vase, dish-on-stand, basin, tall footed vase, bowl and lid show evolved features. The diagnostic shapes include the storage jar with narrow or wide mouth and square, triangular or collared rim; vase with flanged rim and high neck; vase with beaked or beaded rim and high neck; tall footed flask; dish-on-stand with drooping rim; and deep dish-on-stand with undercut rim. The vessels are painted with a profusion of linear and geometric designs in black over a thin dull-red slip. The Harappa and SISWAL B ceramic traditions have blended and it is difficult to distinguish between them, particularly in fabric and surface treatment.

The architecture marks a slight decline as the walls are not as solid now as in Phase A and are sometimes made of mud or mud-brick fragments. The brick sizes, however, continue to be the same ($40 \times 20 \times 10$ cm) as in the preceding phase. The streets are 1.5 to 3.1 m wide. Soakage jars and grain silos plastered with chaff-mixed clay are seen in some houses.

Suraj Bhan, 1969, in *Jour. Haryana Studies*, 1, pp. 1-15; 1973, in Agrawal, D.P., & Ghosh, A., ed., *Radiocarbon & Indian Arch.*,

Mohtola

Bombay; 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide, Kurukshetra*.—SURAJ BHAN

Mitli, Dt Kaira. Microliths (of unspecified nature).

IAR 1963-4.

Mittapalle, Dt Kurnool. Site with Rouletted [11.21] and Russet-coated Painted [11.22] Wares.

IAR 1963-4.

Mittapalli¹, Dt Dharmapuri. Dolmenoid cists [4.17.9].

IAR 1965-6.

Mittapalli², Dt Kurnool. Site with Russet-coated Painted Ware [11.22].

Maloney, C., 1976, in Stein, B., ed., *Essays on s. India*, Delhi.

Mittatmakur. See BOGGERU VALLEY.

Miyapur. See PURNA VALLEY.

Mochiwadar, Dt Rajkot. Early historical [4.18.2] site near Jhanjhmer.

IAR 1958-9.

Mochpol, Dt 24-Parganas. The site, about 24 km to the n.-e. of Calcutta, yielded early historical pottery, perforated tiles and lumps of clay bearing impressions of reed or split bamboo.

IAR 1972-3.

Moda, Dt Kutch. Historical site. See AJMEL.

IAR 1965-6.

Modakkur, Dt Coimbatore. Megalithic [4.17.9] site with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Modasa, Dt Sabar-Kantha. Palaeolithic [4.2] tools including an ovate in Vaal technique were collected from the gravelly flood-plain terrace of the Mujham river off Modasa.

IAR 1958-9.

Modhera, Dt Mahesana. Site with a group of four antennae swords and two antennae daggers of copper [4.11], a few cream-slipped sherds suggesting affinities with the early levels of PRABHAS PATAN, Red Polished Ware [11.23] and punch-marked [3.1], Kshatrapa and Valabhi coins.

IAR 1953-4; 1956-7. *Purātattva*, 6, 1971-2, p. 8. Also information from S. Asthana.

Modi, Dt Mandsaur. Palaeoliths in the Chambal valley, rock-shelters with paintings [13] and a large number of lithic tools consisting of triangles, lunates, flakes, and blades, mainly of chalcedony, and pottery. Excavation in a painted rock-shelter shown 10 undisturbed layers, the lowest of which produced Middle (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) tools. In layer 9 there were geometric microliths and in 8 an anvil stone and a small heap of haematite grains. In layers 7, 6 and 5 there were more microliths but no pottery. Layer 4 was sterile. Layers 3, 2 and 1 produced potsherds of the 11th and 12th centuries and a few unfinished beads.

IAR 1956-7; 1958-9. Wakankar, V.S., & Brooks, R.R.R., 1976. *Stone Age Painting in India*, Bombay.

Modia, Dt Hissar. Site with red ware (of unspecified nature).

IAR 1966-7.

Modirambedu, Dt Chingleput. Lower Palaeolithic [4.2] site on the Namavaram.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras, p. 150. Foote, R.B., *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Mogalluru, Dt Prakasam. Middle [4.3] and Upper Palaeolithic [4.4] site.

Aiyappan, A., 1942, *Manley Collection of Stone Age Tools*, Mem. ASI, 68, pp. 8-9.

Mogor, Dt Kaira. Microlithic (of unspecified nature) tools.

IAR 1964-5.

Mohagaon-Budruk, Dt Chandrapur. Lower Palaeolithic [4.2] site.

IAR 1961-2.

Mohal-Kalan, Dt Hoshangabad. Middle Stone Age (Middle Palaeolithic [4.3]) and microlithic (of unspecified nature) tools.

IAR 1961-2.

Mohammadheri, Dt Gurgaon. PGW [11.14] site.

Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide, Kurukshetra*, p. 126.

Mohammadpur, Dt Sangrur. Late Harappa [4.10] site.

Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide, Kurukshetra*, p. 122.

Mohanpur, Dt Ambala. Late Harappa [4.10] site comparable with MITATHAL II B.

Suraj Bhan, 1976, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide, Kurukshetra*, p. 135. *Haryana Studies in History & Culture*, p. 135.

Mohantada, Dt Santal Parganas. Stone Age site. See PAHARPUR.

IAR 1960-1.

Mohari, Dt Chhatarpur. Tools of Series I (Lower Palaeolithic [4.2]) were found in loose gravels of the Bila from the reserve forest area of Mohari.

IAR 1960-1.

Mohgaon, Kalan, Dt Chhindwara. Tools of Series II (Middle Palaeolithic [4.3]) were found on a ridge near Mohgaon, a site known for its plant fossils.

IAR 1959-60.

Mohida-tarf-haveli, Dt Dhule. Microliths (of unspecified nature) were collected from near the Jaina caves on the Gomai.

IAR 1959-60.

Mohiuddinpur, Dt Saharanpur. Site with Harappa Ware [11.3] and OCW [11.5].

IAR 1966-7.

Mohlipada, Dt Dhule. Lower Palaeolithic [4.2] tools.

IAR 1958-9.

Mohpada, Dt Valsad. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAR 1964-5.

Mohtola, Dt Chandrapur. Late Stone Age (Mesolithic [4.5]) site.

IAR 1970-1.

Mojhari, Dt Chanda. The site on the Wainganga yielded fluted cores [16.15.2] and points.

IAR 1968-9.

Mojwadim, Dt E. Nimar. Palaeolithic and microliths (of unspecified nature).

IAR 1959-60.

Molakalmur, Dt Chitradurga. Megalithic [4.17.8] site.

Seshadri, M., 1956, *Stone-using Cultures of Pre- & Proto-historic Mysore*, London, p. 63.

Molayanur, Dt Dharmapuri. Megalithic sites with dolmens [4.17.9].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Monachitra, Dt Birbhum. Site with microliths (of unspecified nature).

IAR 1964-5.

Mondakuri, Dt Dharmapuri. Megalithic sites with dolmens [4.17.9].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Mondhal, Dt Hissar. Early historical [4.18.1] site.

Silak Ram, 1972, unpublished thesis, Kurukshetra Univ.

Mondhori Khera, Dt Gurgaon. PGW [11.14] and early historical [4.18.1] site.

Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.

Moodheguloor, Dt Anantapur. Port-holed cists [4.17.7].

Taylor, M., *Megalithic Tombs & other Ancient Remains in the Deccan*, Hyderabad, 1941.

Mookanur-Cheri, Dt Dharmapuri. Megalithic [4.17.9] site.

IAR 1962-3.

Moonak, Akalgarh, Dt Sangrur. PGW [11.14] site on the right bank of the Ghaggar.

IAR 1968-9. Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 124.

Mopalpur, Dt Meerut. PGW [11.14] site.

IAR 1968-9.

Mor, Dt Sagar. Lower Palaeolithic [4.2] site.

Proc. Asiatic Soc. Bengal, 1867, pp. 142-8.

Mora¹, (22°26'; 70°13'), Dt Jamnagar. Late Harappa [4.10] site corresponding to RANGPUR II B and II C.

AI, 18 & 19, 1962 & 1963, p. 206.

Mora², Dt Mathura. Well known for an inscription in which a son of the Mahāksatrapa Rājuvala is mentioned. Excavation yielded images and large inscribed bricks of the 3rd-2nd century B.C.

ASI-AR 1911-2.

Moradabad. See CHANDRAPRABHA VALLEY.

Morakuru, Dt Guntur. Early historical [4.18.10] site.

Madras Arch., Rep., 19 June 1892, p. 6.

Moral, Dt E. Godavari. The mound consists of a thin layer with Black-and-red Ware [11.15.3] in the lower level and a huge deposit of medieval red and grey wares at the top.

IAR 1972-3.

Moramadugu, Dt Dharmapuri. Dolmenoid cists [4.17.9].

IAR 1965-6.

Moraon, Dt Fatehpur. Site with NBPW [11.16].

IAR 1958-9.

Morar river, Dt Gwalior. The river was explored down to Mahe, 5 km from Morar, and tools ascribable to the Upper Palaeolithic [4.4] were recovered. Middle Palaeolithic [4.3] tools were obtained from the right bank of the river near the dam site. The upper gravel on the left bank yielded scrapers in a rolled condition.

IAR 1968-9; 1972-3.

Moratgi, Dt Bijapur. Chalcolithic [4.14.8] site. See ALMEL.

IAR 1959-60.

Morawa, Dt Mirzapur. Upper Palaeolithic [4.4] and Late Stone Age (Mesolithic [4.5]) site.

IAR 1969-70.

Mordai, Dt Udaipur. Microlithic site. See BARA BEDLA.

IAR 1956-7.

Morhana Pahar, Dt Mirzapur, near Bhainsaur, with painted rock-shelters [13] and with microliths of the Mesolithic [4.5] tradition, excavated by R.K. Varma of the Univ. of Allahabad. An open-air habitation site was found to have six deposits, successively from bottom upwards, with non-geometric microliths unassociated with pottery, geometric microliths with pottery and diminutive microliths with the same pottery. An excavated rock-shelter yielded more or less the same sequence.

Varma, R.K., 1965, in Misra, V.D., and Mate, M.S., ed., *Indian Prehistory: 1964*, Poona, pp. 72-4.

Mori, Dt Mandsaur. A group of 30 rock-shelters were found in and around village on the Rampura-Bhanpura road. The ceilings and walls of the shelters were decorated with paintings in red ochre depicting animals, dancing human figures and pastoral scenes, generally assignable to Series III-IV of Gordon (Gordon, D.H., 1958, *Prehistoric Background of Indian Culture*, Bombay, p. 105). Microliths comprising long blades, lunates and fluted cores of agate and chalcedony were also encountered.

IAR 1957-8.

Moribetta, Dt Coorg. Megalithic [4.17.8] site with dolmens. A monolithic figure looking like a bird was also found.

Proc. Asiatic Soc. Bengal, 1869, pp. 202-3.

Mori-ma, Dt Ahmadabad. Early historical [4.18.2] site.

IAR 1967-8.

Morhjar, Dt Kutch. Historical site. See AJMEL.

IAR 1965-6.

Morkhi, Dt Jind. Pre-Harappa [4.8] site comparable with Degenerate SISWAL.

Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 125.

Morpur (22°16'; 69°49'), Dt Jamnagar. Lustrous Red Ware [11.9] site corresponding to RANGPUR III.

AI, 18 & 19, 1962 & 1963, p. 206.

Morsi, Dt Amravati. Series II (Middle Palaeolithic [4.3]) tools and microliths (of unspecified nature).

IAR 1960-1.

Mortakka, Dt W. Nimar. Pebble tools [4.2] were found.

IAR 1970-1.

Morthal, Dt Aligarh. OCW (?) [11.5], PGW [11.14], black-and-red ware [11.6], Black-slipped Ware [11.13], red ware of the Sunga-Kushan period and medieval ware.

IAR 1966-7.

Morthali, Dt Kurukshetra. Site with PGW [11.14].

IAR 1960-1; 1966-7. Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 124. *Haryana Studies in History & Culture*, p. 135.

Morwana, See GAMBHIRI VALLEY.

Mosai, Dt E. Nimar. Microliths (of unspecified nature).

IAR 1958-9.

Motacharya, Dt Surat. Early, Middle (Lower, Middle Palaeolithic [4.2, 3]) and Late Stone Age (Mesolithic [4.5]) sites.

IAR 1967-8.

Motadaka, Dt Guntur. Megaliths [4.17.7] were discovered on the Guntur-Amaravati road and behind the hillock on the w. side of the village.

IAR 1960-1; 1962-3.

Motakepalli, Dt Kolar. Site with black-and-red and red wares.

IAR 1972-3.

Motasar, Dt Ganganagar. RANG MAHAL [11.24] site.

See SARASVATI VALLEY.

Unpublished.

Motasar Tibba-1, Dt Ganganagar. Harappa [11.3] and RANG MAHAL [11.24] Wares. See SARASVATI VALLEY.

Unpublished.

Motasar Tibba-2, Dt Ganganagar. Harappa Ware [11.3], terracotta toy cart, bangles, chert blades and disc beads. See SARASVATI VALLEY.

Unpublished.

Motibennur, Dt Dharwar. Early historical [4.18.11] site.

See HANDIGNUR.

IAR 1958-9.

Moti Bhamri, Dt Bharuch. Late Stone Age (Mesolithic [4.5]) site.

IAR 1969-70.

Motidharai, Dt Bhavnagar. Two Pds of occupation with a considerable hiatus in between were brought to light. Pd I was characterized by the Harappa Ware [11.3], while Pd II was distinguished by crude grey and painted red wares of historical times.

IAR 1955-6; 1957-8.

Moti-Kalavad, Dt Jamnagar. Prabhas [11.8] and Lustrous Red [11.9] Wares.

IAR 1961-2.

Moti-Khlori, Dt Rajkot. Site with Harappa Ware [11.3].

IAR 1957-8.

Moti Paneli, Dt Rajkot. Series II (Middle Palaeolithic

[4.3]) tools were found in the bed of the Venu near Moti Paneli.

IAR 1958-9.

Moti Phalod, Dt Surat. Microlithic (of unspecified nature) site.

IAR 1971-2.

Moti-Rayani, Dt Kutch. Early historical [4.18.2] site.

IAR 1961-2.

Motiwalzar, Dt Valsad. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3]) site.

IAR 1968-9.

Mottangurichi, Dt Dharmapuri. Megalithic sites with dolmens [4.17.9].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Mottanur, Dt Coimbatore. Megalithic cairn circles [4.17.9].

IAR 1962-3.

Motur, Dt Dharmapuri. Megalithic tombs [4.17.9].

IAR 1965-6.

Moudhuja, Dt Ghazipur. Historical site (of unspecified nature).

IAR 1962-3.

Mouttrapaleon, Pondicherry. Megalithic site. See MENGALAM.

Movi, Dt Bharuch. Middle (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) sites.

IAR 1969-70.

Moviya, Dt Rajkot. Site with Red Polished Ware [11.23].

IAR 1957-8.

Mow, Dt Bhind. Black-and-red ware (of unspecified nature) and NBPW [11.16].

IAR 1959-60.

Mowad, Dt Chanda. Late Stone Age (Mesolithic [4.5]) site.

IAR 1967-8.

Muchandi, Dt Belgaum. Megalithic [4.17.8] habitation site also with a few squar cists.

IAR 1963-4. Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 15-23.

Muchchatla Chintamana Gavi (Betamcherla), Dt Kurnool. Upper Palaeolithic [4.5] and Neolithic [4.6.8] site. See BILLA SURGAM.

Murthy, M.L.K., 1975, in *Arch. Studies*, Amsterdam, pp. 131-8.

Muchukota, Dt Anantapur. Mesolithic [4.5] and Neolithic [4.6.8] site.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras. IAR 1965-6.

Mudalakkampatti, Dt Coimbatore. Site with Russet-coated Painted Ware [11.22].

IAR 1960-1.

Mudanidambur, Dt S. Kanara. Megalithic site with rock-cut chambers [4.17.10].

Jour. Karnataka Univ., 10, 1974, p. 4-5.

Mudavad, Dt Dhule. Tools of Series III (Mesolithic [4.5]) including blades, points, scrapers, awls, etc., were

collected. Microliths and sometimes neoliths were found in association with the black-on-red painted pottery. Alongside was also a coarse grey ware, similar to that from the Chalcolithic [4.14.6] levels at BRAHMAGIRI and BAHAL. The Chalcolithic culture was superimposed successively by cultures with the typical Black-and-red Ware [11.15] and a coarse red-slipped ware, the latter being assignable to the Sātavāhana period.

IAR 1957-8.

Mudenur, Dt Dharwar. Site with Polished stone axes, grey ware and early historical [4.18.11] material.

IAR 1959-60.

Mudigal, Dt Anantapur. Neolithic [4.6.9] habitation site and Megalithic [4.17.7] pottery. See AKKAMMAKONDA.

IAR 1965-6.

Mudigedu. See KANDLERU VALLEY.

Mudigodu, Dt Kurnool. Early historical [4.18.10] site.

IAR 1964-5.

Mudnur, Dt Dharwar. Early historical [4.18.11] site. See ANVERI.

IAR 1959-60.

Mudumtorna, Dt Chanda. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAR 1961-2.

Mugalabele, Dt Kolar. Megalithic [4.17.8] burial site.

IAR 1969-70.

Mugalkhod, Dt Belgaum. Neolithic [4.6.9] and Chalcolithic [4.14.8] site.

IAR 1965-6, P.B. Desai Felicitation Vol., Dharwar, 1971, pp. 4-30.

Mugati, Dt Bellary. Neolithic [4.6.9] site.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, pp. 77-8.

Muhammadpur-Dhumi, Dt Meerut. PGW [11.14] site.

IAR 1967-8.

Muiyagarh, Dt Saran. NBPW [11.16] and structural remains, the size of the bricks being 45.7 × 25.4 × 7.6 cm.

IAR 1961-2.

Muizzuddin, (22°28'; 74°53'), Dt Hissar. RANG MAHAL [11.24] site.

IAR 1967-8.

Mujali, Dt W. Nimar. On the confluence of the Mogri and Goi, 20 km w. of Sendhawa, a much eroded mound with black-and-red ware (of unspecified nature) was found.

IAR 1959-60.

Mukahalli, Dt Mysore. Megalithic cist burials [4.17.8].

IAR 1961-2.

Mukallampur, Dt Muzaffarnagar. Red ware of Śunga-Kushan assemblage and medieval ware.

IAR 1962-3.

Mukasi-Pidariyur, Dt Coimbatore. Russet-coated Painted Ware [11.22].

IAR 1960-1.

Mukha-Dari, Dt Mirzapur. Rock paintings [13].

IAR 1960-1.

Mukhalingam, Dt Srikakulam. Sherds of the Rouletted Ware [11.21] and Megalithic Black-and-red Ware [11.15] were found. A Sātavāhana coin of the early centuries of the Christian era was also picked up from the mound behind the famous temple of Mukhalingesvara.

IAR 1957-8; 1961-2.

Mukhtiyala, Dt Krishna. Megalithic [4.17.7] site yielding dolmens and stone circles.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Mukkellapadu, Dt Krishna. Site with Megalithic [4.17.7] dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Mukkolu, Dt Krishna. Megalithic [4.17.7] site.

IAR 1966-7.

Mukundevan, Dt Gorakhpur. Black-and-red ware (of unspecified nature).

IAR 1963-4.

Mukutmanipur, Dt Bankura. Tools of Series II (Middle Palaeolithic [4.3]) and microliths (of unspecified nature).

IAR 1959-60.

Mulagundamu Fort, Dt Kurnool. Neolithic [4.6.8] celts, scrapers and cores.

Foot, R.B., 1916, *Prehistoric & Protohistoric Antiquities*, Madras.

Mulamutha river, Dt Pune. Pebble tools [4.2] were found in the lower gravel of the terrace of the river.

IAR 1972-3.

Mulangi. See HIRE and CHICK MULANGI.

Mulangudi, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 1, 1, pp. 515-8.

Mulavi, Dt Salem. Neolithic [4.6.10] site near Yercand.

IAR 1962-3.

Mullassery, Dt Trichur. Megalithic [4.17.10] site with rock-cut caves.

IAR 1967-8.

Mullipallam, Dt Madura. Megalithic [4.17.9] sites with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Mullur, Dt S. Arcot. Megalithic [4.17.9] site.

AI, 22, 1966, p. 32.

Mul-Madhavpur, Dt Jamnagar. Prabhas [11.8] and Lustrous Red [11.9] Wares.

IAR 1961-2.

Multanpura. See SHIVNA VALLEY.

Multukonampalayam, Dt Coimbatore. Megalithic [4.17.9] site.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras, p. 217.

Mumad, Dt Sonapat. PGW [11.14] site.

Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Suttlej-Yamuna Divide*, Kurukshetra, p. 126.

Munagacherla, Dt Krishna. Historical site in continuous occupation from the 3rd to the 16th century.

IAR 1964-5.

Munai, Dt Jabalpur. Neolithic [4.6] site.

Madhya Pradesh ki Ruparekha, p. 38.

Munandipatti, Dt Madurai. Megalithic [4.17.9] cists.

IAR 1960-1.

Munda, Dt Kutch. RANG MAHAL [11.24] site.

AI, 18 & 19, 1962 & 1963, p. 187.

Mundabani (22°2'; 86°35'), Dt Mayurbhanj. See KULIANA.

Mundaganur, Dt Bijapur. Lower and Middle Palaeolithic [4.2, 3] site.

IAR 1963-4. Pappu, R.S., 1974, *Pleistocene Studies in the Upper Krishna Basin*, Pune, p. 32.

Mundata, **Mundehta**, Dt Gurgaoan. Pre-Harappa [4.8] and late Harappa [4.10] site.

Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 126. Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.

Mundh -1 and -2, Dt Kurukshetra. Mund-1 yielded PGW [11.14] and early historical ware [4.18.1]. Mund-2 is a late Harappa [4.10] site.

IAR 1966-7. Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 125. *Haryana Studies in History & Cultures*, p. 138.

Mundi, Dt E. Nimar. Microliths (of unspecified nature).

IAR 1958-9.

Mundira, Dt Birbhum. Black-and-red ware characteristic of the MAHISDAL complex.

IAR 1963-4.

Mundur, Dt Palghat. Megalithic [4.17.10] site with cist burials.

IAR 1969-70.

Mungasala, Dt Krishna. Neolithic [4.6.8] implement and early historical [4.18.10] pottery.

IAR 1961-2.

Mungi, Dt Ahmadnagar. Mesolithic [4.5] site.

IAR 1960-1.

Mungrul, Dt Dhule. Lower Palaeolithic [4.2] tools.

IAR 1959-60.

Mungse, Dt Ahmadnagar. Tools of Series II (Middle Palaeolithic [4.3]) and microliths (of unspecified nature). (Same as following?).

IAR 1960-1.

Mungsi, Dt Ahmadnagar. Late Stone Age (Mesolithic [4.5]) site. (Same as preceding?).

IAR 1965-6.

Munkola, Dt Gurgaon. Munkola-2 yielded pre-Harappa [4.8] and Munkola-1 late Harappa [4.10] material.

Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 126.

Munnibaba, Dt Mirzapur. Rock-shelter with paintings [13].

Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad, p. 55.

Munsgi, Dt Akola. Mesolithic [4.5] site.

IAR 1965-6.

Munta Gura Ritah, Dt Chanda. Site on the Satti Nullah yielding blades, points and lunates.

IAR 1968-9.

Murali, Dt Allahabad. Middle Stone Age (Middle

Palaeolithic [4.3] and Microlithic [4.5]) factory site.

IAR 1962-3; 1969-70.

Muralia, Dt Mirzapur. Microliths (of unspecified nature).

IAR 1962-3.

Murali-Mahugarh, Dt Mirzapur. Early Stone Age (Lower Palaeolithic [4.2]) factory site.

IAR 1969-70.

Muransole, Dt Midnapur. Early Stone Age (Lower Palaeolithic [4.2]) tools and microliths (of unspecified nature).

IAR 1964-5; 1968-9.

Murawa, **Marawa**, Dt Mirzapur. Middle Stone Age (Middle Palaeolithic [4.3] and Upper Palaeolithic [4.4]) factory site in the BELAN VALLEY.

IAR 1969-70; 1970-1. Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad, pp. 43, 49.

Muri, Dt Purulia. Early (Lower Palaeolithic [4.2]) and Late Stone Age (Mesolithic [4.5]) implements were found at a site on the left bank of the Subarnarekha, a few km downstream from Muri.

IAR 1965-6.

Murappandu, Dt Tirunelveli. Megalithic [4.17.9] site.

ASI-AR 1902-3.

Murbarahuli, Dt Varanasi. Early historical [4.18.1] site.

ASI-AR 1902-3.

Murel Khurd, Dt Raisen. Late Stone Age (Mesolithic [4.5]) tools.

IAR 1971-2.

Murgakhera. See NARMADA VALLEY.

Murganhata, Dt Singhbhum. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3]) tools and microliths (of unspecified nature).

IAR 1962-3.

Murkhala, Dt Chandrapur. Late Stone Age (Mesolithic [4.5]) site.

IAR 1970-1.

Murkhera, Dt Indore. Ancient site (of unspecified nature).

IAR 1970-1.

Murna river, Dt Shahdol. The river Murna, a tributary of the Son, yielded Late Stone Age (Mesolithic [4.5]) tools s. of Kalyanpur, Middle Stone Age (Middle Palaeolithic [4.3]) tools near Lal-Devi and Early Stone Age (Lower Palaeolithic [4.2]) tools about 1 km s. of the bridge on Shahdol-Birsinghpur highway.

IAR 1965-6.

Murpar, Dt Chanda. Late Stone Age tools.

IAR 1962-3.

Mursa, Dt Chanda. Lower Palaeolithic [4.2] site.

IAR 1959-60.

Murthala, Dt Ambala. PGW [11.14] site.

IAR 1964-5. Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 123.

Murud, Dt Ranchi. So-called Asura site [14.4] yielding a copper chain, bronze ear-rings and an elongated crude celt of phyllitic rock.

Roy, S.C., 1916 & 1921, in *Jour. Bihar & Orissa Res. Soc.*, 2, p. 73, & 6, p. 416.

Muruda, Dt Mayurbhanj. Neolithic [4.6.7] tools.

IAR 1958-9.

Murugamala, Dt Kolar. Megalithic [4.17.8] site.

Seshadri, M., 1956, *Stone-using Cultures of Pre- & Proto-historic Mysore*, London, p. 16.

Murwara, Dt Jabalpur. Rolled Lower Palaeolithic [4.2] tools.

IAR 1968-9.

Musalvadi, Dt Bijapur. Site with coarse red-slipped ware, Russet-coated Painted Ware [11.22] and Red Polished Ware [11.23].

IAR 1958-9.

Musalwadi, Dt Ahmadnagar. Site with Chalcolithic [4.14.6] remains—painted ware with microliths and fluted cores.

IAR 1958-9.

Musanagar, Dt Kanpur. Site with polished stone axe, PGW [11.14] and NBPW [11.16].

IAR 1955-6; 1967-8.

Mushtoor, Dt Raichur. Early historical [4.18.11] site.

IAR 1962-3.

Mushtur, Dt Chittoor. Megalithic dolmens [4.17.7].

IAR 1963-4.

Mustafabad, Dt Ambala. PGW [11.14] site.

IAR 1966-7.

Mustahkam, **Mustahkan**, Dt Saharanpur. OCW [11.5] and PGW [11.14] site.

IAR 1967-8; 1968-9.

Mutharam, Dt Karimnagar. Mesolithic [4.5] site.

Gururaja Rao, B.K., 1978, *Decade of Arch. Studies in s. India*, Dharwar, p. 49.

Muthudaka, Dt Guntur. Megalithic [4.17.7] site.

IAR 1962-3.

Muthur, Dt Coimbatore. Megalithic [4.17.9] cairn circles.

IAR 1962-3.

Muttalawadi, Dt Mysore. Neolithic [4.6.9] site.

Information from C. Krishnamurthy through A. Sundara.

Muttampatti, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 2, 1, p. 933.

Muttanad Mand, **Mutanad Mand**, Dt Nilgiri. Megalithic [4.17.9] site.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras, p. 225.

Muttanapalayam, Dt Coimbatore. Megalithic site with dolmens [4.17.9].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Muttanchalli, Dt Tiruchchirappalli. Megalithic [4.17.9] Black-and-red Ware [11.15].

IAR 1963-4.

Muttatody, Dt Cannanore. Rock-cut cave [4.17.10] of an unusual type yielding a large number of bowls, dishes, plates and iron objects.

IAR 1970-1.

Muttukadu, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 2, 1, p. 934.

Muzaffarabad, Dt Saharanpur. Site with Śunga-Kushan and medieval wares.

IAR 1964-5.

Muzaffarpur, Dt Varanasi. Early historical [4.18.1] site.

IAR 1962-3.

Mydakur, Dt Cuddapah. Early, Middle (Lower, Middle Palaeolithic [4.2, 3]) and Late Stone Age (Mesolithic [4.5]) tools.

IAR 1964-5.

N

Nabavad, Dt Dhule. Lower Palaeolithic [4.2] tools.
IAR 1958-9.

Nachalhalli, Kolar. Megalithic [4.17.8] site with stone circles and cists.

Information from C. Krishnamurthy through A. Sundara.

Nachandapalli, Dt Kolar. Megalithic [4.17.8] stone circles. (Same as NACHANDAPALLI?).

IAR 1972-3.

Nachanshada, Dt Birbhum. Black-and-red ware (of unspecified nature).

IAR 1967-8.

Nachanthapalli, Dt Kolar. Megalithic [4.17.8] site. (Same as NACHANDAPALLI?).

IAR 1971-2.

Nachchiarpettaimedu, Dt S. Arcot. Extensive urn burial site.

IAR 1960-1.

Nadattara, Dt Trichur. Megalithic [4.17.10] site.

IAR 1966-7.

Nadaun, Dt Hamirpur. Lower Palaeolithic [4.2] site in the BEAS VALLEY.

Mohapatra, G.C., 1966, in *Bull. Deccan College Res. Inst.*, pp. 221-36.

Nadia, Dt Nadia. Painted-butt polished stone axes [4.6] from near the town.

AI, 4, 1947-8, p. 298.

Nadigudiketar, Dt Belgaum. Megalithic [4.17.8] site.

Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 15-22.

Nadiharalhalli, Dt Dharwar. Palaeolithic and microliths (both of unspecified nature) and Chalcolithic [4.17.8] remains of BRAHMAGIRI affiliation and polished stone axes.

IAR 1960-1.

Nadimipalli, Dt Mahbubnagar. Lower Palaeolithic [4.2] site yielding hundreds of pebble choppers, a few cleavers and proto-handaxes of the Abbevillio-Acheulian stage.

Gururaja Rao, B.K., ed., 1978, *Decade of Arch. Studies in s. India*, Dharwar, p. 47.

Nadisar, Dt Panch Mahals. Late Stone Age (Mesolithic [4.5]) site.

IAR 1971-2.

Nadivi, Dt Bellary. Early historical [4.18.11] site.

IAR 1962-3.

Nadner, Dt Sehore. Early historical [4.18.7] site on the bank of the Narmada with black-and-red, Black-slipped Ware [11.13], NBPW [11.16] and other associated wares.

IAR 1970-1.

Nadoha nullah, Dt Allahabad (?). Early, Middle (Lower and Middle Palaeolithic [4.2, 3]) and Late Stone Age (Mesolithic [4.5]) tools were obtained from the bank of the nullah.

IAR 1966-7.

Nadse, Dt Dhule. Chalcolithic [4.14.6] site.

IAR 1963-4.

Nadubetta, Dt Nilgiri. Megalithic [4.17.9] site with cairns.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Naduvattom Dosam, Dt Palghat. Megalithic [4.17.10] site with burial jars and circular pits.

IAR 1968-9.

Naduvil-Amsom, Dt Cannanore. Megalithic [4.17.10] cist circles

IAR 1961-2.

Nagai, Dt Gulbarga. Megalithic [4.17.8] site with dolmens.

Jour. Geological Survey of Hyderabad, 5, 1, p. 56.

Nagaiwari, Dt Nagpur. Megalithic [4.17.6] site with stone circles.

IAR 1970-1.

Nagakuppa, Dt Kolar. Megalithic [4.17.8] stone circles and cists.

IAR 1972-3. Also information from C. Krishnamurthy through A. Sundara.

Nagal (21°37'; 72°55'), Dt Bharuch, excavated by the M.S. Univ. of Baroda. The excavation has revealed three Pds. Previous exploration had yielded the black-and-red ware [11.6] (*IAR 1957-8, p. 66*).

Pd I. The black-and-red ware as well as the NBPW [11.16] occur. The main occupation of the black-and-red ware itself can be broadly divided into three phases. The ware of the earliest phase is of medium fabric and is represented by the dish, deep bowl, lota-shaped vessel, wide basin with recurved rim, carinated dish, etc. A silver piece which may be a punch-marked coin [3.1] with one face beaten flat and the other carrying some symbols(?) has been found in the lowest phase.

Pd II. The black-and-red ware shows sophistication and competence in technique and continues in greater frequency along with the plain ware with profuse incised decoration, mostly of basket and reed pattern, deserving special mention. A distinctive decorative feature of the black-and-red ware consists of designs executed on the

inner flat base of the dish or lib. Among the other antiquities are grey-coloured terracotta animal figurines including the cow, bull, buffalo, dog, etc.

Pd III. Pd III is characterized by a slightly coarser black-and-red ware associated with some grey as well as local red wares. There are also etched carnelian beads, bone points, stone pestles [6.19], legged querns [6.19], copper antimony rods [18.1], bangles of shell, ivory and bone and net-sinkers [6.16]. A unique double-barbed and tanged arrowhead is an outstanding find. The NBPW and its associated types are completely absent.

On the analogy of BHARUCH the upper levels of Nagal may be dated to about the 2nd century B.C.

—R.N. MEHTA

Nagaladinne, Dt Kurnool. Neolithic flake and cores.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Negalapuram, Dt Anantapur. Ash-mound [14.3].

Reddy, V.R., 1968, unpublished thesis.

Nagalassery, Dt Palghat. Megalithic [4.17.10] site with urn burial.

IAI 1968-9.

Nagaldinna, Dt Bellary. Russet-coated Painted Ware [11.22].

AI, 4, 1947-8, p. 308.

Nagalwadi, Dt Nagpur. Megaliths [4.17.6].

IAI 1961-2.

Nagamalai, Pudukkottai, Dt Madurai. Urn burials and cairn circles [4.17.9].

IAI 1957-8.

Nagamangalam, Dt Dharmapuri. Dolmenoid cists [4.17.9].

IAI 1965-6.

Nagaon, Dt Dhule. Microliths (of unspecified nature).

IAI 1960-1.

Nagapalli, Dt Mahbubnagar. Megalithic [4.17.7] site.

Sreenivasan, P., 1963, *Arch. Bulletin*, Hyderabad, 5, p. 3.

Nagaparambu, Dt Malappuram. Rock-cut cave [4.17.10] with Black-and-red Ware [11.15.3].

IAI 1964-5.

Nagar¹ (31°5'; 75°50'), Dt Jullundur, 9 km n.-e. of Phillaur (AI, 10 & 11; 1954 & 1955, p. 140; IAI 1963-4, p. 28) with a threefold sequence of culture, excavated by the writer on behalf of the ASI in 1976-7. Pd I is represented by the PGW [11.14] with a sprinkling of the late Harappa [11.4] sturdy red ware (cf. similar overlap at BHAGWANPURA², DADHERI, KATPALON and MANDA). Semicircular huts and two oval structures of burnt earth, probably of a religious nature, have been noticed. Copper objects, bone styli [20.5], terracotta ear ornaments and animal figures, besides beads and bangles, have been found. Pd II has the typical Kushan pottery, terracottas and coins. A terracotta seal [3.2] reads *sri-mahāsenāputi-Rāmaguptasya* in characters of the 3rd century. In Pd III there was a prosperous

medieval occupation. (Black-slipped ware, 11.13, is also reported.)

—J.P. JOSHI

Nagar², Dt Tonk. Late historical [4.18.2] site excavated by Krishna Deva on behalf of the Jaipur State Dept of Arch.

Unpublished.

Nagara (70°38'; 21°41'), Dt Kaira, about 3 km to the n. of Cambay, with many mounds out of which vertical excavation of three, Hanumandhodo, Varai-Mata-no-Dhodo and Ratankhad was undertaken by the M.S. Univ. of Baroda in 1963-5.

Pd I (middle 1st millennium B.C.). This Pd is marked by the presence of iron and bone objects, black-and-red ware [11.6], plain red ware, etc. Bones of the cow, sheep, goat, pig, ass and camel have been obtained. The presence of *Lacromina croix* indicates the natural vegetation. An earthen embankment belongs to this Pd.

Pd II (3rd century B.C. to the beginning of the Christian era). The materials of Pd I continue in this Pd. NBPW [11.16] and punch-marked coins [3.1] are introduced for the first time. Mud floors and channel hearths have been found, as also terracotta figurines, beads of stone and shell objects. This Pd indicates that the habitation was gaining in importance.

Pd III (beginning of the Christian era to c. 8th-9th century). This was the era of foreign contacts and the growth of the settlement as a city. Roman antiquities, specially amphora [11.19], have been obtained. The Red Polished Ware [11.23], plain and burnished red ware, crude gritty red ware, inscribed seals with Brāhmi legends, Kṣatrapa coins, ivory and shell objects, such as bangles and beads, stone objects and beads of glass, lapis lazuli and other materials indicate far-flung contacts of this place. The buildings of brick, series of channel hearths with charcoal and charred grains and marks of cart-track indicate heavy activity during this Pd. The remains have been obtained from the trench at Ratankhad, indicating the expansion of the site in this Pd.

Pd IV. At the close of Pd III the town began to shrink and large parts remained without much habitation in the succeeding centuries. Remains however can be traced in the village. Significantly this feature indicates that the habitation continued on a small part of the original town that has shrunk.

Pd V (14th to 16th centuries). After the 14th century habitation was resumed. Glass slag, glazed pottery, burnished as well as black and plain burnished and plain red ware, half-round tiles, structures of brickbats, etc., have been found. The remains of the Pd are covered by the modern land surface.

Mehta, R.N., & Shah, D.R., 1968, *Excavation at Nagara*, Baroda.—R.N. MEHTA

Nagamam, Dt Chanda. Tools of Series I and II (Lower and Middle Palaeolithic [4.2, 3]), a number of microliths

(of unspecified nature) and black polished sherds.
JAR 1958-9.

Nagarhalli¹, Dt Bijapur. Chalcolithic [4.14.8] habitation site rich in microlithic blades along with fluted cores, Jorwe Ware [11.11] and grey ware similar to that from BRAHMAGIRI.

JAR 1958-9.

Nagarhalli², Dt Dharwar. Black-and-red Ware [11.15.3] site.

JAR 1967-8.

Nagari, Dt Chittaurgarh, on the right bank of the Berach, 13 km n. of the Dt headquarters, identified as Madhyamikā or Mādhyamika, the capital of the *Janapada* of the Śibis, a fairly large-sized fortified town. Exploration of Kaviraja Shyamal Das, 1887, near the site at Ghosundi (HATHIBARKALA) led to the discovery of Vaiṣṇavite inscriptions of the 3rd century B.C. Later on D.R. Bhandarkar found other inscriptions, one recording the performance of an *aśva-medha* sacrifice by one Sarvatāta and another of *vajapeya* sacrifice and a third the erection of a Viṣṇu temple—all of the first quarter of the 5th century.

Coins occur profusely on the surface. A.C.L. Carlyle (ASI—AR, 6, p. 198) found 175 of them and D.R. Bhandarkar 24, out of which some were punch-marked [3.1] Ksatrapa and four of the *Śibi-janapada* with the legend *Majhamikāye Sivi-janapadasa*, giving the clue of the identification of Nagari with Madhyamika.

The site was superficially excavated by Bhandarkar in the second decade of the century (Bhandarkar, 1920) and limitedly but more systematically by K.V. Soundara Rajan of the ASI in 1962-3 (JAR 1962-3, p. 19). Out of the large number of loose sculptures found by Bhandarkar two are carved pillars of the Gupta period having lion and bull capitals respectively. The others comprise old railings, coping stones and a sculpture representing Revanta on horse. Moulded bricks showing ripple and date-palm decorations, the lower part of a human figure seated on a chair, lotus, flying birds and human heads formed the architectural components of the temple.

In the excavation of 1962-3 three Pds were distinguished, the first two being anterior to the stone fortification and seemingly without baked-brick structures, though limestone structures were known. They had both red and grey wares; the occurrence of the NBPW [11.16] was negligible, though the associated red ware was available. The settlement seems to have originated in c. 400 B.C., but both on the surface and sporadically in the lower levels fluted cores and flakes were found. Pd III was marked by the presence of the Red Polished Ware [11.23]. The other finds of the site include terracotta human and animal figures in Śunga and Gupta styles, toys and flesh-rubbers [18.4], an ivory seal with *svastika* and taurine symbols and copper antimony rods [18.1] and

rings. The fortification probably originated in Gupta times.

Bhandarkar, D.R., 1920, *Arch. Remains & Excavation at Nagari*, Mem. ASI, 4. Jain, K.C., 1972, *Cities & Towns of Rajasthan*, Delhi, pp. 94-100. Kaviraj Shyamal Das Ram Prasad, 1887, in *Jour. Asiatic Soc. Bengal*, 56, 1, pp. 77-9.—R.P. SHARMA

Nagari Kheri, Dt Jind. Late Harappa [4.10] site.

Suraj Bhan, & Shaffer, J.G., 1978, in *Man & Environment*, 2, p. 62.

Nagarjunakonda, Nagarjunikonda, (16°31'; 79°14'), Dt Guntur, on the right bank of the Krishna, the valley now submerged, first brought to light in 1926 by A.R. Saraswati of the ASI. Explorations by Kuraishi and Sastri in the same year and excavations carried out subsequently by Longhurst (1927-31) and then by Ramachandran (1938) created the impression that it was an extensive Buddhist settlement that came up during the rule of the Ikṣvākus who had their capital Vijayapuri in this valley itself. But the large-scale excavations, which commenced in 1954 consequent on the decision of turning the hill-girt valley into a reservoir of the Nagarjunasagar Dam across the Krishna, revealed a cultural sequence from the Lower Palaeolithic to the medieval times, besides unearthing the remains of the city of Vijayapuri, which flourished mainly in the 3rd and the 4th centuries A.D.

Sites numbering more than 130 were spread over an area of 23 sq km inside the valley, closed on all sides by the hills of the Nallamalai Range. These sites may broadly be divided into seven Pds: Pd I, Lower Palaeolithic [4.2]; Pd II, Middle Palaeolithic [4.3]; Pd III, Mesolithic [4.5]; Pd IV, Neolithic [4.6.8]; Pd V, Megalithic [4.17.7]; Pd VI, early historical [4.18.10]; and Pd VII, medieval. Though Lower Palaeolithic tools could be picked up from any part of the valley, it was Site 129 that exposed an advanced Acheulian industry in a stratigraphical context since tools in good state of preservation were found overlying the pebble bed resting on a fossil river-bank. The pebble bed was followed by a thick talus deposit of shingles over which was discovered a Middle Palaeolithic assemblage dominated by blade flakes made mostly on quartzite.

A more developed Acheulian industry was brought to light from trenches laid near the *ghāt* road leading into the valley. Here tools were found in a thin deposit of calcareous tufa overlying the deposit of brecciated sandstone. The occurrence of calcareous tufa in different parts of the valley indicated the presence of marshy condition which again was perhaps the result of the increased river action that was responsible for the deposit of the pebble bed at Site 128. Evidently the tools occurring in the thin deposit of the calcareous tufa suggesting a drier condition have to be dated later than those of Site 128. In both the industries tools were fashioned exclusively on flakes struck off from river-worn quartzite pebbles and in the technique no prepara-

tion of the core was involved. Significantly cleavers constituted the dominant type at Site 128 accounting for 46% of the tools, the percentages of handaxes and choppers being 37.0%, and 12.7% respectively. On the other hand at the other site choppers formed 42.6%, followed by scrapers, 30.9%, handaxes, 17.6% and cleavers, 8.8%. It is worth noting that Levallois technique [16.15] was absent in them though prepared cores were found in the early post-Acheulian industry from Veerla Bodu, the adjacent valley. The Middle Palaeolithic industry encountered at Nagarjunakonda appears to be later than that of VEERLA BODU.

The Middle Palaeolithic tradition with its blades, blade flakes, points, scrapers, etc. seems to have continued even in the Mesolithic cultures. Like the Lower Palaeolithic tools Mesolithic microliths abounded in the valley. However surface collections revealed certain areas of concentration disclosing at the same time several typo-technological differences. For instance the industry noticed in the n.-e. part (Locality A) of the valley was in the main a non-geometric assemblage consisting of backed blades, crude lunates, scrapers, points, etc., whereas the site located close to the quartz reef Tallarallabodu yielded geometric tools like lunates, triangles, trapezes, etc., made on rock crystal. True blades were absent in them as in several other assemblages of the valley. In the excavations at Sites 45 A and 53 microliths came from a stratigraphical context and blade flakes seemed to have been part of such facies. Site 53 produced an industry dominated by geometric tools types with a high incidence of retouched implements, while that of Site 45 A was basically non-geometric in character with unretouched blades constituting a higher percentage. The tradition of Site 45 A appeared to be the precursor of a microlithic tradition associated with some Neolithic culture.

There were at least five Neolithic sites—Sites 45, 46, 46 A, 47 and 68—the last-mentioned being a cemetery with two strata of burials. All these sites, except Site 68, were situated along the foot of a doleritic dyke that traversed along the centre of the valley. Site 45, representing the earliest Neolithic phase (earlier than 2500 B.C.), revealed a short-blade microlithic industry accompanied by a crude reddish-brown handmade pottery, basaltic or quartzite flakes and a few crudely fashioned neoliths probably used for tillage operation. It did not yield burnished grey ware, disc beads and animal bones which became the dominant features in the evolved Neolithic phase of Nagarjunakonda. Phase II of the Neolithic culture, which did not evolve out of the earlier one, was characterized by the higher frequency of red ware over the burnished grey ware, besides the occurrence of pits, animal bones, microliths on chert and rock crystal, flake tools on greyish quartzite and disc

beads. The occupants seem to have lived in some sort of semisubterranean dwellings, and one such pit contained the skeleton of an adult male, tall and robust and having a dolichocephalic head. It was covered by a cairn heap; in fact all the pits in the same alignment were packed with boulders. This was the period when Neolithic tools were used quite commonly. The earlier stratum of Site 68, yielding only extended inhumation burial, was perhaps coeval with this phase.

The evolved phase (c. 1500 B.C.) at Site 46, which again did not develop out of the earlier tradition in the valley, showed predominance of the burnished grey ware over the red ware, occurrence of Neolithic tools of various types, microliths on rock crystal, quartzite flakes, disc beads of paste, steatite and shell, workings on bone or horn, large quantities of animal bones, pits of various sizes and urn burials for infants at the habitation site. The semisubterranean dwellings were in vogue alongside houses, mostly rectangular on plan, built on thick poles. Ascribable to this phase was the upper stratum of the cemetery at Site 68 revealing both extended inhumation and post-exhumation burials, accompanied as usual by burial pots. In this phase also the people were not wholly sedentary, as a good number of pits were found to have been packed with boulders after their use for some time. The Neolithic tool types, which included axes, adzes, elongated celts, shoe-last celts, weeding hoes, picks, sometimes with twin working ends, chisels, axe-cum-hammers, side-choppers, fabricators, etc., showed that these were used not merely for carpentry but also for tillage operations. That the people stock-breeding is evident from the animal bones, including those of cattle.

Between the last phase of the Neolithic culture and the Megalithic burials, there being no habitation site of the megalith-builders here, there must have been a time interval of about 1000 years. Megalithic monuments, a few of which were first excavated by Longhurst, were distributed into two distinctive clusters—Sites 44 and 63. The former being a disturbed area, the actual number of its stone circles could not be ascertained, but most of them yielded no cultural remains. At the same time the one that had disarticulated remains of at least three adult individuals, all of them buried in a rectangular cist, accompanied by grave goods in the form of pottery and iron objects, proved to be the richest megalith of Nagarjunakonda. The only other cist, at Site 64, produced two human femurs and an armlet. Site 63 was a cluster of 18 megaliths, of which all the examples except one were pit circles. At this site 13 megaliths were opened, but barring two, Megs. XIV and XV which disclosed primary extended inhumation burials, all of them entombed the remains of post-exhumation burials. The dead were laid in a n.-s. orientation as in the Neolithic cemetery but the

skeletal remains in Meg. XV were placed in an e.-w. orientation. Very often animal bones were also found; in fact the evidence from Meg. XII proved beyond doubt that the actual interment was preceded or succeeded by elaborate rituals including animal sacrifice. Thus two articulated skeletons of animals, one of them a calf, were placed at different levels but far above the floor-level of the pit having the disarticulated remains of an adult individual. It is interesting to note that in the 14 megaliths that were opened the remains of at least 19 individuals—17 adults and two children—could be identified. These people were tall in stature, sturdy and wide-nosed; a brachycephalic element was also present.

A time interval has again to be assumed between the Megalithic culture and the early historical phase commencing in about A.D. 200. Indeed the written history of Nagarjunakonda is ushered in at the time of the later Śātavāhanas whose archaeological vestiges are represented by coins of Gautamī-putra Śātakarṇi, Pulumāvi, Yajña Śātakarṇi, etc., and the pillar-inscription, perhaps coming from one of the earliest Buddhist establishments of the valley, of Gautamīputra Vijaya Śātakarṇi, dated in his 6th regnal year. The name Vijayapuri, which became later the capital of the Ikṣvākus, was after Vijaya Śātakarṇi, who might have been the real founder of the city. It was the Ikṣvāku king Vāsiṣṭhiputra Cāntamūla who had snatched a portion of the kingdom of the tottering Śātavāhanas sometime in the second quarter of the 3rd century. So far the names of the four Ikṣvāku rulers—Vāsiṣṭhiputra Cāntamūla, Mātharīputra Virapuruṣadatta, Vāsiṣṭhiputra Ehuvala Cāntamūla and Vāsiṣṭhiputra Rudrapuruṣadatta—are known from epigraphs, which, in addition to their coins, are the main sources of their dynastic history. These kings, who were worshippers of Mahāśena, though many of their queens and princesses were patrons of Buddhism, ruled for about 100 years or so. Significantly no inscription of Vāsiṣṭhiputra Cāntamūla, except his memorial pillar set up in the reign of his son, came from Nagarjunakonda. The fact that his inscriptions were discovered at Kesanapalli and Rentala may indicate that Nagarjunakonda came under his sway at a later part of his rule and he might have wrested the control of Nagarjunakonda from Vijaya Śātakarṇi. An inscription from the Aṣṭabhujaśvāmin temple, Site 29, provides the name of another king, Vāsiṣṭhiputra Vasusena, but he belonged to the Ābhīra dynasty of the Nasik region; perhaps this king extended his territory over this region only for a brief period in c. 278. It is worth noting that the Ikṣvākus had throughout matrimonial connections with the Śakas of Ujjain.

Under the Ikṣvākus Vijayapuri became an important centre of political and cultural activities. It had a well-thoughtout plan, within which civic needs and security

received equal consideration. The citadel proper enclosing the king's area had rampart walls with moats on the three sides save partially on the w., i.e. towards the river. Structures (Sites 90-92, 94-95, 100-104, etc.) inside included, residential buildings, barracks, stables, cisterns, baths and square wells or soak-pits. Unfortunately it has not been possible to identify with certainty the palace but the building-complex, part of which was known as the Aśvamedha site (Site 93) was in fact the bathing establishment attached to the palace-complex. The site had two ornamental tanks connected with underground drains, apart from wells and paved cisterns. One of them was tortoise-shaped, while the other, square and stepped, had originally a wooden superstructure that was destroyed in fire.

The bulk of the population had its residence (Sites 58, 69, 72, 89, 109, 112, 115, 117-119) outside the citadel; houses consisting of rooms arranged in one alignment with a common veranda were generally built of rubble, mud serving as the binding material. Incidentally lime was used whenever the particular structure was to come in contact with water. Some of the buildings were shops or centres of craft: one of the rubble-built houses (Site 58) disclosed the entire stock-in-trade of a goldsmith. Richer people built houses in brick (Sites 48, 74) but following the same house-plan. In all likelihood wealthy persons built houses, like the one of Site 49, consisting of rooms of halls arranged all around a central pillared hall. There is no doubt that the settlements followed a linear pattern and that they came up along broad roads intercepted by cross-roads and bylanes. Some of the wealthy houses came up along the bank of a canal (Site 19 A), with rubble-built ramps on either side. The most imposing of the secular structures here, the open-air theatre or amphitheatre (Site 17) [14.2], with a tiered brick-built gallery on all the sides, was situated on the bank of this canal passing along the foot of the hill. Built on a Roman or Greek prototype, it enclosed a rectangular area and had seating arrangements for over 1000 spectators. A novel feature of the Ikṣvāku town-planning was the provision of about a dozen wayside rest-houses, in the form of pillared halls (Sites 13, 18, 36, 39A, 50, 70, 81, 88, 107, 111, 114, and 121) and public baths (Sites 19, 70A and 100). Some of the rest-houses were in close proximity of *chāyā-stambhas*, [12.7] or memorial pillars (Sites 27, 59, 113, etc.) raised in honour of kings, queens, generals, artisans, religious teachers and so on.

Far more impressive edifices were the Brāhmanical temples and the Buddhist establishments built mostly in burnt brick. There were about 18 Brāhmanical temples (Sites 29, 34-35, 39, 56-57, 64, 74, 78, 80, 82-84, 97, 99, 122, 126-127) situated mostly along the n.-flowing Krishna and around the citadel. Four of them were

undoubtedly Śaiva, meant for either Śiva or Kārttikeya; inscriptions give us the names of two Śiva temples—of Puṣpabhadrasvāmin (Site 34), built on apsidal plan, and of Nṛgaśiṣvarasvāmin (Site 127)—having a square sanctum, while two temples of Kārttikeya—one with a square sanctum, (Site 82) and the other oblong (Site 34) on plan—were identified on the basis of discovered icons. An inscribed image of the mother goddess [12.6] from Site 126 and terracotta plaques depicting the same form may show the presence of such a temple. There was also a temple (Site 39), rectangular on plan, for Devī though the image found at this site has been identified as Devasenā, the consort of Kārttikeya or Mahāsena. The only Vaiṣṇava temple (Site 29) was that of Aṣṭabhujaśvāmin whose wooden image having eight arms might have been fixed on a stone pedestal containing the inscription of Ābhira Vasuśena. One of the conch-shells discovered at this site, which consisted of two shrines, one apsidal and the other rectangular, besides pillared halls, bore the design of a *cakra*-capital with the inscription *bhagavato Aṣṭabhuja-sāmisa*; a flag-staff surmounted by a *cakra* also came to light. Likewise the Puṣpabhadrasvāmin temple (Site 34) has an inscribed *dhvajastambha* but without a capital. The Bathing Ghat [14.10] (Site 34), fully encased in stone, was in front of this temple, and like the open-air theatre was a wonder of Ikṣvāku architecture. These temples are referred to in the inscriptions as *devakula*, but the temples of Sarvadeva (Site 99) has been mentioned as *prāsāda*. The latter seemed to have been a double-storeyed structure, associated with several versions of a Sanskrit inscription and situated close to a huge tank, perhaps a *eppakulam* (Site 122) used for the annual floating ceremony of gods. Architecturally the Brāhmaṇical shrines built on apsidal, rectangular or square plan may be divided into two groups: (i) single shrine and (ii) complex with more than one shrine, both the groups having front *maṇḍapas*, sometimes even with a 100-pillared hall. Invariably the sanctums were smaller in dimensions than the *maṇḍapas* in front.

More than 30 Buddhist establishments (Sites 1-9, 14-15, 15A, 16, 20-24, 26-28, 30, 32A, 32B, 36, 38, 43, 51-52, 54, 59, 85-86, 105-106, 108) belonging to various sects like the Aparamahāvīnaseliya (Sites 1, 9) and Bahuśrutiya (Site 5) of the Mahāsāṅghika Order and Mahīśāka (Sites 7, 8) and Mahāvihāravāsini (Site 38) of the Theravādin Order were exposed. These monasteries were spread throughout the valley except the river-bank. The earliest of them was the *mahā-caitya*, Site 1, built in the 6th regnal year of Vīrapuruṣadatta, for the monks of the Aparamahāvīnaseliya sect. In the beginning this sect did not accept the idea of image-worship but after a period of about three decades some of its adherents built a monastery (Site 9) where an apsidal

chapel enshrined the image of Buddha. The simple layout consisting of the principal *stūpa* and *vihāra* attained considerable elaboration at the latter site, the monastic establishment of which consisted of a *stūpa*, two apsidal shrines, one meant for the *stūpa* and the other for the image of Buddha, a pillared hall surrounded by a three-winged *vihāra* and two small *stūpas*. Some of the evolved monasteries (Site 85) had two chapels—one oblong and the other apsidal—each enshrining an image of Buddha. Not all monasteries accepted the idea of worshipping the image of Buddha, for the establishment of the Mahīśāsakas (Sites 7, 8) was without it. Incidentally Nagarjunakonda also yielded circular image shrines, the best example of which came from Site 24, associated with a memorial pillar (*chāyā-stambha*) of Śrī-Vammabhaṭṭa, the Śāka mother of Rudrapuruṣadatta.

Most of the *stūpas* were wheel-shaped on plan, the number of spokes varying from four, six, eight to ten, and had *āyaka* platforms surmounted by five *āyaka* pillars at four cardinal directions. The wheel-shaped plan, which may be the outcome of a long series of experiments in different parts of India, including Andhra, reached its perfection here. In the construction of such *stūpas*, the like of which is the Dharmarājikā Stūpa at Taxila of the first century A.D., the architects successfully translated a sacred Buddhist symbol into an architectural entity, besides attaining constructional perfection. That ideology influenced the plan of the *stūpa* was evident from the example with *svastika* inset in the centre (Sites 20, 59, 108). But not all *stūpas* of Nagarjunakonda, and for that matter, of the entire Andhra country, were wheel-shaped on plan or had *āyakas*. For example, the one of the Mahāvihāravāsini (Site 38) had a solid construction without the *āyaka*-platforms. Quite a good number of *stūpas* yielded relics [12.8] and may therefore be called *sāririka* (corporeal) *stūpas* but isolated ones (Sites 15A, 16 and 22) may belong to the *auddeśika* type. Many *stūpas* had their drums and other parts encased with exquisitely sculptured slabs depicting episodes from Buddha's life, Jātaka stories and sometimes even scenes of secular import. Some were built on a raised platform (Site 4), whereas in some (Site 3) a railing either carved or uncarved was also provided. In sculptural wealth some (Sites 2, 3, 6, 9, 32A, etc.) may rival any site in India; in fact taken collectively the Nagarjunakonda phase represents the culmination of the Krishna valley art that had its beginning at AMARAVATI in the second century B.C.

What happened after the fall of the Ikṣvākus is not known, though in the post-Ikṣvāku times a few Brāhmaṇical establishments were built, the most important of which are the so-called Hāriti temple-complex (Site 17) consisting of at least three square shrines and the Kārttikeya temple-complex (Site 57), the latter also

having three or four square shrines, apart from a stepped well. That some of the early temple complexes were in use till at least the 7th century may be gathered from the pilgrims' records. At the same time Nagarjunakonda lost its importance after the Ikṣvāku though many subsequent dynasties like the Pallava, Cālukya, Reddi of Koṇḍaviḍu, Gajapati of Orissa, Vijayanagara, etc., had a nominal hold over the valley.

The medieval hill fort that came up on the hill, Nagarjunakonda, because of its strategic location near the fordable point, contains three medieval temples which have escaped submergence. It may be mentioned here that the name Nagarjunakonda occurs only in medieval records and does not seem to have any connection with Nāgārjuna, the Buddhist philosopher of the second century A.D. Anyway it is on this hill, now transformed into an island, that some of the reconstructed monuments like the Bathing Ghat, Sites 4, 93, etc., have been built; the museum on this island contains not only the salvaged relics but also scale-models of the sites, now under water. A few reconstructed monuments, including the open-air theatre, may also be seen on the e. bank of the modern reservoir near the jetty. The programme of reconstruction of transplantation of ruins of monuments has been a unique venture, the first in India.

Longhurst, A.H., 1938, *Buddhist Antiquities of Nagarjunakonda*, Madras Presidency Mem. ASI, 54. Ramachandran, T.N., 1953, *Nagarjunakonda 1938*, Mem. ASI, 71. Sarkar, H., 1962, in *AI*, 16, pp. 65-84. Sarkar, H., and Misra, B.N., 1972, *Nagarjunakonda*. Subrahmanyam, R., et al., 1975, *Nagarjunakonda, 1954-60*, 1, Mem. ASI, 75. New Delhi:—H. SARKAR

Nagarmadu, Dt Dharwar. Early historical [4.18.1] site. IAR 1960-1.

Nagasamudra, Dt Shimoga. Neolithic [4.6.9] site.

Gazetteer of India, Karnataka, p. 36.

Nagatti, Dt Thanjavur. Megalithic [4.17.10] Black-and-red Ware [11.15.3], all-black and coarse red wares, bangle pieces and beads of glass.

IAR 1964-5.

Nagavanda, Dt Dharwar. Early historical [4.18.11] site.

Progress of Karnataka Res. in Bombay State, 1947-52, p. 21. *Jour. Karnataka Univ.*, 8, pp. 1-8. Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 43-5, 131-3.

Nagda, Dt Ujjain, on the e. bank of the Chambal, excavated by the ASI under N.R. Banerjee in 1955-6 (IAR 1955-6, p. 11). Rising to a height of over 27 m from the surrounding plains the occupational deposit reaches a depth of 9.75 m and is divisible into three Pds, in all of which the structures follow a common alignment bespeaking a continuity of occupation.

Pd I has a depth of over 5 m (elsewhere it is stated to be 6-70 m). It is Chalcolithic [4.14.5] in character and is marked by massive structures of mud and mud brick, most of them residential, though one may be a rampart bastion. It has black-painted red pottery, microliths and

a limited quantity of copper. The pottery is red or cream, almost invariably with paintings in red on the exterior, the designs comprising horizontal bands, the intervening space sometimes filled with various designs, concentric semicircles, connected loops, vertical or horizontal wavy lines, radiating lines, filled or hatched triangles, single or double sun symbol and animals like antelope, spotted deer and peacock. A black-and-cream ware, also painted, and a crude grey ware are also present. The stone tools comprise parallel-sided blades produced by the crested-ridge technique and are sometimes serrated. The other finds are stone sling balls or pounders, terracotta beads, whorls [6.25] and animal and human figurines, including a fiddle-shaped one [17.2]. The Pd thus partakes of the characteristics of the c. Indian Chalcolithic culture, though definite comparative stratigraphy has yet to be worked out. It should however be noted that the white-slipped ware of NAVDATOLI and the typical Jorwe Ware [11.11] are absent. Towards the end of the Pd a sturdy and well-fired pale-red and a creamy-slipped ware usually painted in black but sometimes alternately with black and red is met with.

Pd II, pre-NBPW [11.16], a 2.10 m thick deposit after a hiatus, is marked by the use of iron, though it continues some of the earlier Chalcolithic features. Among the iron objects there are tanged and non-tanged arrowheads, spearheads, daggers, axes including socketed ones, knife-blades, blades, celts, sickles, spoons, nails and rings. Black-slipped Ware [11.13] and black-and-red ware [11.6.2] are dominant. The Pd corresponds to Pd I of UJJAIN.

Pd III, ascribed to 500-200 B.C. is characterized by the NBPW and associated wares and has produced a rich repertoire of iron objects, such as knives including a curved one, chisels, sickles with curved blades, arrowheads of square, rectangular and hexagonal cross-sections, occasionally tanged, double-edge daggers, hoes, chisels, nails and bowls. Terracotta skin-rubbers [18.4], polished stone discs, ivory pendants and hairpins, bone styli [20.5], copper antimony rods [18.1], rings and bangles, toys like leopard on wheels, pestles and mortars [6.19], etc. constitute the other finds of the Pd. An inscribed potsherd and terracotta ball would fix the terminal date of the site as the 2nd century B.C.

Banerjee, N.R., 1965, *Iron Age in India*, Delhi (where the periodization is different from that given in the initial report in IAR 1955-6).—A. BANERJEE

Nagdiha, Dt Saran. Early historical [4.18.3] site. IAR 1965-6.

Nagiari, Dt Rupnagar. PGW [11.14] site.

IAR 1962-3; 1964-5. Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 133.

Nagini, Dt Ahmadabad? Early historical [4.18.2] site with Red Polished Ware [11.23].

IAR 1955-6.

Nagla Firoz Mohanpur, Dt Meerut. PGW [11.14] site.

IAR 1967-8.

Nagla Hareru, Dt Meerut. PGW [11.14] site.

IAR 1970-1.

Nagla-ki-Rani, Dt Bulandshahr. Early historical [4.18.1] and medieval site.

IAR 1963-4.

Nagnoli, Dt Una. Site with early historical [4.18.1] pottery.

IAR 1970-1.

Nagoor, Dt Bidar. Neolithic [4.6.9] site.

Karnataka Bharati, 11, 3.

Nagpur¹, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) tools.

IAR 1962-3.

Nagpur², Dt Nagpur. Megaliths [4.17.6] on the Seminary hill.

IAR 1961-2.

Nagrota, Dt Jammu. Sohanian pebble tools and flakes [4.2] were found on the terraces on the river Tawi.

IAR 1966-7.

Nagsar, Dt Dhule. Late Stone Age (Mesolithic [4.5]) and microlithic (of unspecified nature) tools. Also an open-air camp site yielding large irregular as well as fluted cores [16.15.2]; blades, points, scrapers, etc.

IAR 1960-1.

Nagur, Dt Bijapur. Microliths and remains of the Chalcolithic [4.17.8] period.

IAR 1961-2.

Nagwa, Dt Mirzapur. Microliths (of unspecified nature).

IAR 1962-3.

Nahargarh, Dt Mandasaur. Site with Kayatha Ware [11.7]) (Same as following?).

Wakankar, V.S., 1976, in *Arch. Congress & Seminar 1972*, Kurukshetra.

Nahargarh, Dt Mandasaur. A single loose gravel was noticed on the e. bank of the Shivena. Here a few cleavers and discoids [4.2] were found over the gravel which also yielded a few Series II (Middle Palaeolithic [4.2]) tools comprising scrapers and fluted cores. (Same as preceding? See SHIVNA VALLEY.)

IAR 1959-60.

Nahli, Dt Meerut. OCW [11.15] site.

IAR 1968-9.

Nahush-ka-Tila. See GHOSI.

Naikund. See 4.17.6.

Naipora, Dt Jaunpur. Site on the n. bank of the Gomati yielding sherds of Black-slipped Ware [11.13], NBPW [11.16] and red wares.

IAR 1966-7.

Nakara, Dt Hamirpur. Neolithic [4.6.3] celt.

IAR 1963-4.

Nakhtarana, Dt Kutch. Early Stone Age (Lower Palaeolithic [4.2]) site on the Bhukhi.

IAR 1967-8.

Nakjhur, Dt Sidhi. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2.3]) tools.

IAR 1962-3.

Nakloi, Dt Rohtak. Nakloi-I (Gujralikheda) yielded PGW [11.14] and Black-slipped Ware [11.13], while Nakloi-II (Shakmirakheda) yielded grey ware.

Jour. Haryana Studies, 3, 1, p. 6.

Nakodar, Dt Jullundar. Late historical [4.19.1] mound yielding knife-edged bowls, shallow dish-cum-bowls, deep basins and vases in red ware.

IAR 1972-3, p. 28.

Nakode, Dt Nasik. Middle (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) site.

IAR 1965-6.

Nakora (29°30'; 74°44'), Dt Hissar. Site with PGW [11.14], grey ware, Black-slipped Ware [11.13], black-and-red ware (of unspecified nature), Rang Mahal Ware [11.24] and medieval ware.

IAR 1967-8. Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 123.

Nakrahia, Dt Sitapur. Four shouldered celts of copper [4.11].

Arch. Congress & Seminar: 1972, Kurukshetra, p. 98. Information from S. Asthana.

Nalagarh, Dt Solan. Lower Palaeolithic [4.2] site. See SIRSALA VALLEY.

Mohapatra, G.C., 1966, in *Bull. Deccan College Res. Inst.*, p. 224.

Nalanda, (23°8'; 85°27'), Dt Nalanda, near village Bargaon, with extensive ruins of a great Buddhist establishment, 85 km s.-e. of Patna and 11 km n. of RAJGIR. first reported on by F. Buchanan in the early years of the last century (Martin, 1838) and identified as such by A. Cunningham (*ASI-AR*, I, p. 28) on the basis of the bearings given by Chinese pilgrims. Apart from minor explorations, Broadley probably carried out some unsystematic excavation at what is now known as Caitya Site 12 and published a monograph on the ruins (Broadley, 1872). From 1915-16 to 1935-6 the ASI, under H. Sastri and later on under J.A. Page and others, carried out extensive excavations here laying bare monasteries, temples and minor structures (*ASI-AR 1915-6* and onwards).

The traditional history of Nalanda goes back to the times of Buddha and Mahāvira and it is said to be the birth-place of Śāriputra, a chief disciple of Buddha. Later Buddhist saints are also associated with it. But excavations have not revealed anything earlier than the Gupta period, the main focus of activity being during the time of the Pālas (8th-12th centuries). Fa Hien, early 5th century, does not mention any monastic establishment here except a *stūpa* (Legge, 1886, p. 31). But by the 7th century Nalanda had established its reputation as a centre of learning as Hiuen Tsang spent here a few years studying Mahālandā Buddhism and mentions a few monasteries supposedly built by later Gupta rulers. During his time Nalanda was humming with literary and religious activities presided over by distinguished priests

(Beal, 1884, 2; p. 118), though attempts to identify the monasteries seen by him with their later counterparts as excavated have met with scanty success. So great was the celebrity of Nālandā during those days that within 30 years of Hiuen Tsang's departure no less than 11 Chinese and Korean travellers, including I-Tsing, are known to have visited the centre. The Pāla rulers of e. India (8th to 12th century) continued their benevolence towards Nālandā though the establishment of other monasteries by them, including VIKRAMASĪLĀ, must have affected the importance of Nālandā.

The structural remains of Nālandā as excavated generally belong to the Pāla period, though in some cases those of the lowest levels may belong to earlier times. The portable antiquities also mostly belong to that period, the earlier ones having been found generally in dumps or hidden hoards. Of these early antiquities may be mentioned seals [3.2] of Gupta and Maukhari rulers, Harṣavardhana, rulers of Assam and others of unknown lineage, administrative seals and coins of Gupta rulers and clay coin moulds [3.1].

The temples and monasteries are in two parallel rows, the temple facing e. and the monasteries w., the wide space in between sometimes occupied by stray shrines. Temple 3, the tallest of the monuments of Nālandā represents the result of seven accumulations, the earliest three of modest dimensions being buried deep under the later ones. The temple of the fifth stage, with four corner towers, had its facade ornamented with stucco figures of Buddha and the Bodhisattvas in Gupta tradition, which were encased within the extension of the sixth stage. The level of the shrine at the top rose with each reconstruction with a resultant higher flight of steps at each stage. The ruins of the shrine of the last stage with a pedestal for the installed Buddha image are seen at the top. Each stage had its own votive *stūpas* all round, often engulfed in the later extensions. One of such *stūpas*, of the fifth stage, contained in its core a clay tablet inscribed with the sacred text *Pratītya-samut pāda-sūtra* and dated A.D. 516-7. Another manifestation of devotion is the enshrinement within votive *stūpas* of clay lumps or miniature clay *stūpas*, each having in its core two clay tablets impressed with the Buddhist creed. The temple of the seventh stage externally measures 130 × 80 ft. In previous accounts the edifice is described as a *stūpa* but the existence of a Buddha shrine at the top of each of at least the fifth, sixth and seventh stages indicates it to be a temple.

Temples 12, 13 and 14, square on plan, are almost similar and measure about 50 m sq each. Each has two periods, with stucco Buddha images installed in shrines on a high podium. Temples 12 and 13 have the usual votive *stūpas* around but Temple 14 has none. Its central shrine has mural paintings.

Temple 2, outside the row of main temples, has a dado of 211 sculptured panels of about the 7th century.

Monasteries 1A, 1B, 5, 6, 8, 9, 10 and 11 have two levels each, while Monasteries 1, 4 and 7 have nine, six and three respectively. They are usually squarish and are separated from each other by a passage. They were double-storeyed with staircase perhaps originally of wood, burnt sleepers having been found in excavation, but later on of concrete or stone. They follow the usual monastic plan [14.12] of a central court surrounded by a veranda on each side, beyond which are the monastic cells; the shrine, larger than the ordinary cells and projecting outside, is situated in the centre of the back row, usually fronted by a portico. The courtyards are paved with bricks, stone or concrete (jars with dried-up mortar and a cell used as a cistern in Monastery 11 are indicative of the preparation of concrete), though it appears that brick was the material for the earlier ones. The cells in Monastery 1 have corbelled doorways and vaulted roofs, while the entrances to cells in Monastery 10 have semicircular arches. Most of the cells have a single bed each (a brick platform along one of the walls) but some cells in Monastery 1 have two each. Some monasteries are thickly plastered and bear traces of painting.

The walls of the temples and votive *stūpas* are not always plain. Sometimes they show carved bricks, *kin-naras*, *amalakas*, bead-and-reel decorations, triangles, squares, rope designs, vases-with-foilage, inverted flasks, etc. Neatly jointed bricks present dentils, pots-with-foilage, arches, *kithi-mukhas* and geometric designs. Bricks have straw and rice husk in the core.

The clay for the manufacture of myriads of bricks required for the buildings was dug up from the local alluvial soil, which left a large number of water reservoirs, many of them now dried up. Some of them are referred to by Hiuen Tsang.

Seals are common. The official monastic seals bear as usual the wheel-and-deer insignia and the legend *śrī-Nālandā-mahā-vihāryārya-bhikṣu-saṅghasya*. Secular seals belong to rulers, offices, officers, territorial units, etc.

Stone sculptures, large and small, are not lacking, though Nālandā does not seem to have had a lapidary atelier. But it was certainly an important centre of bronze-casting. Over 500 bronzes of Buddha and Buddhist divinities of Tantrayāna-Vajrayāna, of which Nālandā became the focus in Pāla times, have been recovered. They form a distinctive school, the influence of which spread, along with Buddhism itself, to s.-e. Asia (Barnet Kempers, 1933). A brick-built smelting furnace has been found near Temple 13; it is made of four chambers in one square divided by short walls, each of the chambers provided with two flues for fire to burn and air to pass. The find of burnt metal pieces, slag of

metal and similar objects within it shows that it was used for casting metal.

At an ecclesiastical site like Nālandā it is futile to expect manifold objects of material interest. Nevertheless the following deserve mention, though their stratigraphical position is uncertain: iron flat bars, knives, axes, sickles, tongs, hoes, spades and nails (also of copper); iron *svastikas*; metal and clay lamps [6.11]; censers [12.2]; plain or gilded conches; pottery bowls; bronze cups and jugs; stone pestles, querns [6.19] and ladles; metal scissors; stone-cutter's and artisan's tools, such as iron chisels and honing stones [16.18]; potter's dabbers [16.11]; clay moulds of seals, *stūpas* and plaques; inkpots [20.2] of clay and metal; cowries for exchange; ornamental gold leaves and beads; bone and ivory game pieces [6.7.2]; bangles and rings; rubies for inlaying in bronzes; glass beads and rings; crucibles [16.4]; cattle balls [6.3] of metal; iron elephant goads; and cattle-branding iron stamps. Chain armours, quivers, spearheads, daggers, sword-hilts, etc., as well as glazed pottery, were probably left behind by foreign invaders.

Little is known about the pottery, except that short-spouted earthen jars with mica dust adhering to the surface and with animal and floral designs were in common use.

Beal, S., 1884, *Buddhist Records of the W. World*, London, 2. Bernet Kempers, A.J., 1933, *Bronzes of Nālandā and Hindu-Javanese Art*, Leiden. Broadley, A.M., 1872, *Ruins of the Nālandā Monasteries at Burgaon, Sub-Division Bihar, Zillah Patna, Calcutta*. Ghosh, A., 1939 and subsequent editions, *Nālandā*, Delhi and New Delhi. Legge, J., 1886 *Travels of Fa-Hien*, Oxford. Martin, A.M., 1838, *Eastern India*, London.—B.N. MISRA

Naldeo Kuldeo, Dt Jaunpur. Mound with sherds of Black-slipped Ware [11.13], fine grey and red wares, fragmentary of ring-well [14.15] and baked-brick structures.

IAR 1966-7.

Nalavak Budruk, Dt Dhule. Microliths (of unspecified nature) and sometimes neoliths were found in association with black-on-red painted pottery and coarse grey ware similar to that from the Chalcolithic levels of BRHAMAGIRI and BAHAL [4.14.8, 6]. The site also contained the remains of burials associated with pots of black-and-red Ware [11.15.3] bearing graffiti [20.1]. See DHAMDAL

IAR 1957-8.

Nalvak Khurd, Dt Dhule. Microliths with ochre-coloured pottery.

IAR 1957-8.

Naleshwar, Dt Panch Mahals. Early historical [4.18.2] site.

IAR 1971-2.

Nalhati, Dt Birbhum. Microliths and flake tools (of unspecified nature) and pebble tools.

IAR 1961-2; 1964-5. Das Gupta, P.C., 1966, *Exploring Bengal's Past*, Calcutta.

Nalhera, Dt Saharanpur. Late Harappa [4.10] and OCW [11.5] site.

IAR 1967-8.

Nalkheda, Dt Shajapur. Late Stone Age (Mesolithic [4.5]) site.

IAR 1969-70.

Nallagundlu, Dt Chittoor. A workshop site rich in implements of the blade-and-burin industry and Late Stone Age (Mesolithic [4.5]) tools. The former was found to be older than the latter. The blade-and-burin industry comprised choppers, side and terminal scrapers, awl points, backed tools and a variety of burins. Long parallel-sided blades were quite common. The Late Stone Age industry was characterized by non-geometric microliths.

IAR 1967-8.

Nallagunta, Dt Kurnool. Megalithic [4.17.7] site with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Nallalam, Dt S. Arcot. Megalithic [4.17.9] site.

AI, 22, 1966, p. 32.

Nallamilli, Dt Khammam. Megalithic [4.17.7] site.

Madras Arch. Rep., 25 Aug. 1902, p. 20.

Nallampatti, Dt Coimbatore. Megalithic [4.17.9] site with numbers of dolmens and stone circles.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Nallapalle, Dt W. Godavari. Megalithic [4.17.7] site with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Nallukurichi, Dt Madurai. Megalithic [4.17.9] sites with urns.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Nallur¹, Dt Coimbatore. Megalithic [4.17.9] cairn circles.

IAR 1961-2.

Nallur², Dt Mysore. Site with Russet-coated Painted Ware [11.22]. (Same as NALLURU?).

IAR 1960-1.

Nallur³, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 1, pp. 515-18.

Nallur⁴, Dt Tirunelveli. Megalithic [4.17.9] site.

ASI—AR 1902-3.

Nalluru, Dt Mysore. Megalithic [4.17.8] cist burials. (Same as NALLUR²?).

IAR 1961-2.

Nalrajar Garh, Dt Jalpaiguri. The ruins in Mendabari forest revealed that the site has a rectangular fortification girded by a moat. The massive fortification stands to an extant height of about 4 to 7.5 m and seems to have been built during the Gupta period.

IAR 1966-7.

Nalu, Dt Panch Mahals. Early historical [4.18.2] settlements with Red Polished Ware [11.23], black-and-red

ware, brick structures, beads, bangles and terracotta objects.

Sonawane, V.H., 1976, in *Arch. Congress & Seminar, 1972, Kurukshetra*.

Nalumavadi, Dt Tirunelveli. Megalithic [4.17.9] site.

ASI—AR 1902-3.

Naluvasai-Kottai, Dt Tirunelveli. Prehistoric (of unspecified nature) site.

ASI—AR 1936-7. Cammiade, L.A., *Gazetteer of Tinnevely Dt*, p. 408.

Nalvatwad, Dt Bijapur. Early historical [4.18.11] remains.

IAR 1961-2.

Nalwagal, Dt Dharwar. Palaeolithic and microliths [both of unspecified nature] and Chalcolithic remains characterized by Jorwe Ware [11.11], ware of BRAHMA-GIRI affiliation and polished stone axes.

IAR 1960-1.

Namadiharamana, Dt Palamau. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1971-2.

Nambiyur, Dt Coimbatore. Megalithic [4.17.9] cairns circles.

IAR 1962-3.

Namdha, Dt Surat. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1963-4.

Namkum, Dt Ranchi. Early Stone Age (Lower Palaeolithic [4.2]) implements such as choppers, handaxes and scrapers were found. Flake-blades on quartz and quartzite were also collected from the valley of the Subarnarekha and Sapahi near Namkum. The same site or another site of the same name is a so-called Asura site [14.4] which produced copper bracelets, axe-heads and iron implements and arrowhead.

IAR 1964-5. Roy, S.C., 1921, in *Jour. Bihar & Orissa Res. Soc.*, 6, pp. 413, 417-8.

Nammandahalli, Dt Dharmapuri. Megaliths [4.17.9] with port-holed cists.

IAR 1967-8.

Namri, Dt Udaipur. Microliths (of unspecified nature) in the Karanpur-ki-nadi valley.

IAR 1962-3.

Namsol, Dt Purulia. Middle (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) site. See DADHA.

IAR 1965-6.

Namsukh-Kothi, Dt Bhagalpur. Late Stone Age (Mesolithic [4.5]) site yielding blades, blade-cum-points, knife-blades, scrapers and cores.

IAR 1965-6.

Namula, Dt Nalgonda. Neolithic [4.6.8] site.

IAR 1961-2.

Namuna-ki-Thor, Dt Morena. Historical site (of unspecified nature) in the Chambal valley.

IAR 1972-3.

Nana-Ishvariya, Dt Bhavnagar. Harappa [4.9] site.

IAR 1971-2.

Nananbra, Dt Malappuram. Megalithic [4.17.10] rock-cut cave with central pillar, benches on the sides and containing jars, bowls, vases and ring-stands in Black-and-red Ware [11.15.3].

IAR 1966-7.

Nanapada, Dt Surat. Early, Middle (Lower, Middle Palaeolithic [4.2, 3]) and Late Stone Age (Mesolithic [4.5]) sites.

IAR 1967-8.

Nanauli, Dt Saharanpur. Harappa Ware (?) [11.3] and medieval wares.

IAR 1964-5.

Nand, Dt Kangra. Lower Palaeolithic [4.2] site in the BEAS valley opposite Chamba-Ghat.

Mohapatra, G.C., 1966, in *Bull. Deccan College Res. Inst.*, pp. 221-37.

Nandagaon, Dt Chanda. Middle Stone Age (Middle Palaeolithic [4.3]) site on the Tigelaoagu, a tributary of the Wardha.

IAR 1969-70.

Nandalalpura (27°38'; 76°0'), Dt Jaipur. Site within 200 km of GANESHWAR yielding OCW [11.5] and six copper bar celts different from the copper bar celts discovered in the Ganga-Yamuna doab.

Parmar, B.M.S., 1977, in *Man & Environment*, 1. Agrawala, R.C., 1979, in *ibid.*, 3.

Nandalur, Dt Cuddapah. Site with a large number of palaeoliths (of unspecified nature).

IAR 1957-8.

Nandanahosur, Dt Chitradurga. Megalithic [4.17.8] site with stone circles, and port-holed cists.

AI, 4, 1947-8, p. 307. Seshadri, M., 1956, *Stone-using Cultures of Pre- & Proto-historic Mysore*, London, p. 63.

Nandankottai, Dt Tiruchchirappalli. Megalithic Black-and-red Ware [11.15.3].

IAR 1962-3.

Nandanmedu, Dt Thanjavur. Extensive mound located on the bank of the Tirumalairajan yielded Megalithic Black-and-red Ware [11.15.3] and red-slipped ware. Near the mound an urn burial [4.17.9] was noticed.

IAR 1961-2.

Nandapalle, Dt Cuddapah. Early, Middle (Lower and Middle Palaeolithic [4.2, 3]) and Late Stone Age (Mesolithic [4.5]) tools.

IAR 1964-5.

Nandara, Dt Chanda. Palaeolithic (of unspecified nature) site.

IAR 1959-60.

Nandarkha, Dt Dhule. Palaeolithic tools and microliths (both of unspecified nature).

IAR 1959-60.

Nandavanampalaiyam, Dt Coimbatore. Megalithic [4.17.9] site with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Nadavaram, Dt Bellary. Pointed-butt polished stone axes [4.6.9].

ASI—AR 1930-4.

Nanded, Dt Nanded. Middle Palaeolithic [4.3] site.

IAR 1964-5, p. 26.

Nandgaon¹, Dt Durg. Neolithic [4.6] site.

Madhya Pradesh ki Ruparekha, p. 39.

Nandgaon², Dt Pune. Late Stone Age (Mesolithic [4.5]) site.

IAR 1969-70.

Nandgeri, Dt Bijapur. Chalcolithic [4.14.8] site. See ALMEL.

IAR 1959-60.

Nandhkheda, Dt E. Nimar. Microliths (of unspecified nature).

IAR 1958-9.

Nandi, Dt Kathua. Early Stone Age (Lower Palaeolithic [4.2]) tools were collected from the terrace of the river Basantar.

IAR 1968-9.

Nandigaon, Dt Chanda. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1961-2.

Nandihalli, Dt Raichur. Neolithic-Chalcolithic [4.6.9, 4.14.8] site.

IAR 1962-3.

Nandikeswar, Dt Bijapur. A lower Palaeolithic [4.2] site in the MALAPRABHA river bed near Nandikeswar yielded handaxes, cleavers and pebble tools like choppers and chopping tools. Most of the tools were rolled and were found lying loose in the river bed.

IAR 1955-6.

Nandipadu, See BOGGERU VALLEY.

Nandipalle (79°5'; 14°45'), Dt Cuddapah. Stone Age site situated on a streamlet called Polerammavanka which joins the river SAGILERU. The stratigraphy consists of a basal gravel overlain by coarse white calcareous sand, a second gravel with an overlying layer composed of sticky clayey silt and a third gravel topped by brown silty sand. The artefacts from the three gravels may be divided into: (1) handaxe-pebble tools complex [4.2]; (2) flake tools complex; (3) blade and burin complex [4.4]; and (4) microlithic [4.5] complex. Handaxes and pebble tools occur in equal proportions in Sagileru-I while Sagileru-II has an industry dominated by scrapers.

Thimma Reddy, K., & Sudarsen, V., 1978, in *Man & Environment*, 2, pp. 32-40.

Nandivaram, Dt Chingleput. Megalithic [4.17.9] site.

AI, 22, 1966, p. 39.

Nandura. See 4.6.3.

Nandurbar, Dt Dhule. Late Stone Age (Mesolithic [4.5]) tools.

IAR 1960-1.

Nandur-Madhmeshwar, Dt Ahmadnagar, on the GODAVARI, known for its rich palaeontological yield right from the fifties of the last century, when fossilized remains of *Elephas namadicus* were discovered here. In 1904 remains of the similar species along with the hip-

popotamus were recovered by Pilgrim from the conglomerate gravel of the Godavari near Nandur. On the basis of these palaeontological discoveries the gravel was dated to the Lower Pleistocene [9.8.2] and seemed to be contemporaneous to the fossil-bearing deposits of the NARMADA. It was this evidence that provided impetus to look for the cultural remains of man in this area. Thus under the supervision of Sankalia a team of the Deccan College investigated the valleys of the Godavari and the Kadva (a tributary of the former) around Nandur and Madhmeshwar.

An alluvial deposit approximately 12.2 to 18.3 m high had been observed in the area around Nandur and Madhmeshwar villages in 1943 (Sankalia, 1943, pp. 186-203). The schematic section comprises four layers. From the present bed of the river up to 4.6 m is the trap rock covered by talus. A very thin accumulation of yellowish-brown silt overlies this. The second layer is preserved only at a few localities. The next deposit of gravel which is both implementiferous and fossiliferous has a thickness of about 1.5 m. The topmost layer is composed of 'soil of loamy character'. Later it was noted that the earlier gravel which lay in the river bed was superimposed by a very thick deposit of brownish silt forming the oldest terrace. The succeeding cycles of wet and dry phases were perhaps not very intensive, as the later gravel and silt deposits could not reach the former height and were banked against the earlier cliff. The accumulation of these at a lower height prompted erosion, with the result that the gravel lies scattered at a few places in the present river bed.

Ten artefacts were obtained *in situ* from the area in the earlier investigation (Sankalia, 1943). The types are tanged points, blades with crescentic back, serrated flakes, scrapers on flake and blade, knives and thin blades. Later Sankalia and Banerjee discovered a number of artefacts in this area. The tool-kit, part of parcel of the NEVASA, BEL PANDHALI and KALEGAON group, consists of nearly 2000 artefacts and is characterized by the scraper-point tradition of the Middle Palaeolithic [4.3]. It may be interesting to note that only 21% of the components of the assemblage fall in finished tool category, which has preponderance of various types of scrapers made on flake, core and nodule. The scraper group is marked by the existence of side scrapers, hollow scrapers, end scrapers, round scrapers and double-edged side scrapers. Borers made on flakes, core or nodule also fare well. The points in the assemblage have a number of varieties, i.e., the group of simple points having leaf-shaped, triangular and oval forms and the tanged ones being of single- or double-shouldered types. Quite a few specimens exhibit Levallois character [16.15]. Besides these a composite form, borer-cum-scraper, has also been noticed. It is apparent from the

collection that flakes, cores and flat nodules were given equal preference in making scrapers, points and borers. Flat nodules on chert, jasper, agate, etc. are available in good quantities in the area.

Sankalia, H.D., 1943, in *Bull. Deccan College Res. Inst.*, 4, pp. 186-203; 1974, *Prehistory & Protohistory of India & Pakistan*, Poona, pp. 149-55. V. JAYASWAL.

Nandvan, Dt Dhule. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAAR 1961-2.

Naner, Dt Tonk. Non-Megalithic black-and-red ware [4.6].

IAAR 1958-9.

Nangal, Dt Bharuch. Black-and-red ware [4.6] site with fluted cores [16.15.2] of microliths. A complete extended burial was also noticed.

IAAR 1959-60.

Nangal, Dt Gurdaspur. Early historical remains [4.18.1]. See ACHAL-SAHEB.

IAAR 1961-2.

Nangauli, Dt Chittaurgarh. Black-and-red Ware [11.6] site. See DARAULI.

IAAR 1956-6.

Nangran, Dt Una. Early historical [4.18.1] pottery including grey ware.

IAAR 1970-1.

Nani-Bahari. See PURNA VALLEY.

Nani Nikole, Dt Bharuch. Middle (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) sites.

IAAR 1971-2.

Nanjapur, Dt S. Arcot. Megalithic [4.17.9] site containing pyriform urns and associated pottery.

IAAR 1955-6.

Nanjundapuram, Dt Coimbatore. A row of three chambers believed to form part of cist burials [4.17.9] was exposed.

ASI-AR 1935-6.

Nanmangalam, Dt Chingleput. Megalithic [4.17.9] site.

Footo, R.B. 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 108.

Nanoor, **Nanur** (23°42'; 87°51'), Dt Birbhum, celebrated as the birth-place of Candidasa, the famous medieval Bengali lyric poet, the mound here lying adjacent to a series of temples and named after him. It was excavated by the Calcutta University in 1945-6 (Goswami, 1950). The excavation, though proving to be of little consequence, produced evidence of an ill-defined occupation during Maurya-Sunga times, the pottery types including a few characteristic shapes of the Chalcolithic black-and-red ware [11.6.5], which however did not receive due consideration at that time.

Excavation by the ASI in 1964 (IAAR 1963-4, p. 60) has presented a picture of the earliest occupation of the site, Pd I, in spite of the disturbances caused by sporadic diggings. It is now known that the site was first occupied by the Chalcolithic people [4.14.4] whose cultural equip-

ment consisted of the black-and-red ware, plain and sometimes white-painted, black-painted red ware, bone implements and a few copper objects. This short-lived Pd was followed without any interruption by Pd II, a degenerated Chalcolithic phase distinguished by the emergence of iron. A cultural transmutation, like that of MAHISDAL, is noticeable, particularly in the pottery; while the characteristic shapes like the channel-spouted bowl and perforated vessel continue to occur, the fabric becomes coarser and a new industry with the dish of fine grey or buff ware recalling similar shapes of the PGW of n. India [11.14] makes its appearance. The succeeding levels are in a state of confusion due to the activities of the pit-diggers.

Goswami, K.G., 1950, in *Calcutta Review*, March, pp. 222-34. —S.K. MUKHERJEE

Nanuware (29°33'; 74°51'), Dt Hissar. Rang Mahal [11.24] site.

IAAR 1967-8.

Naogaya, Dt Bharatpur. Kushan red ware and bricks.

IAAR 1971-2.

Nar, Dt Kaira. Chalcolithic [4.14] site with a 3 m thick occupational deposit.

IAAR 1972-3.

Naraina, Dt Fatehpur. Black-slipped Ware [11.13] and coarse and slipped red wares.

IAAR 1967-8.

Naraingarh, Dt Ambala. PGW [11.14] site.

Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 123.

Narain Sing Dhani (29°37'; 75°13'), Dt Hissar. Rang Mahal [11.24] site.

IAAR 1967-8.

Narakatari, Dt Kurukshetra PGW [11.14] site.

Kurukshetra Univ. Res. Jour. (Arts & Humanities), 10, 1976, pp. 28-9.

Narangianpatti, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 1, 1, pp. 515-8.

Naranmangalam, Dt Tiruchirappalli. Megalithic [4.17.9] site yielding stone circles with single or double rings, cairn circles and dolmenoid cist, mostly of undressed boulders.

Gururaja Rao, B.K., 1971, in *Prof. Nilakanta Sastri Felicitation Vol.*, Madras.

Narasamangala, Dt Mysore. Vast Megalithic [4.17.8] field revealing cists, some with baby cists around. (Same as following?).

Seshadri, M., 1960, *Report on the Jandigahalli Megalithic Excavations*, Bangalore, p. 3.

Narasamantala, Dt Mysore. Megalithic Site. (Same as preceding?).

IAAR 1955-6.

Narasinghgarh, Dt Dhule. Lower Palaeolithic [4.2] and Series II (Middle Palaeolithic [4.3]) tools on the Sonar river.

IAR 1958-9.

Narasipur, Dt Dharwar. Early historical [4.18.11] site. See HANDIGNUR.

IAR 1958-9.

Narayana-Chinchali, Dt Solapur. Stone mace-head, Neolithic axe and black-and-red pottery.

IAR 1967-8.

Narayangad, Dt Mandsaur. Chalcolithic [4.14.5] site yielding Kayatha Ware [11.7], white-painted black-and-red ware of AHAR² fabric [11.6.2], black-painted red ware of Malwa fabric [11.10], punch-marked and cast copper coins [3.1] and sherds of NBPW [11.16].

IAR 1969-70.

Narayanpuram, Dt Chingleput. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3]) tools.

IAR 1963-4.

Narela Buzurg, Dt Ujjain. Middle Palaeolithic [4.3] site. IAR 1971-2.

Narhar, Dt Jhunjhunu. Painted and incised pottery of the early Christian era.

IAR 1963-4.

Nariavli, Dt Sagar. Lower Palaeolithic [4.2], Upper Palaeolithic [4.4] and Neolithic [4.6] site. Also rock-shelters [13] with two groups of paintings in red ochre. See SAGAR.

IAR 1958-9; 1959-60. *Maydhyia Pradesh ki Ruparekha*, p. 34.

Narmada valley. The Narmada, originating in the Amarkantak plateau (approximately 22°40'; 81°45'), is one of the two major rivers in peninsular India, the other being the TAPTI, which rise in the hills of c. India and proceed w.wards to meet the Arabian Sea in the Gulf of Cambay. Neither of them flows in valleys of their own erosion; both occupy the fault planes or deep alluvium-filled rifts in the rocks running parallel to the Vindhyan hills. These faults are ascribed to the same tectonic activity as caused the upheaval of the Himalayas. The Narmada traverses a length of nearly 1300 km before entering the sea near Bharuch, crossing varied geological formations—sedimentary Vindhyan, Archaeans, volcanic Deccan Trap basalt, laterite, etc. The longitudinal profile brings out clearly the irregular character of its gradient, which is marked by the waterfalls like Kapildhara, Dhuandhar, Mandhar and Punasa; steep gorges near Jabalpur and Onkareshwar; broad valleys filled with thick alluvial deposits occurring between Hoshangabad and Narsinghpur; and wide flood and tidal plains in its lower course in Gujarat. The relative steepness of the river from Handia in Madhya Pradesh to the sea shows a recent origin of this tract. There is a view that probably the Narmada once flowed out through the Burhanpur-Khandwa gap into the present Tapti river. Some of the major tributaries of the Narmada are the Sher, Shakkar, Dudhi, Tawa in the upper reaches, the Man, Uri Nahall and Borad in the middle part, and the Orsang and Karjan in the lower reaches.

The Narmada basin has got a very special significance in Indian Quaternary [9.8] studies. It is perhaps one of the few regions in India, besides the Siwaliks, where Pleistocene [9.8.2] deposits occur in association with the Stone Age artefacts of all periods and contemporary animal fossils. Thus for the Quaternary stratigraphy and chronology of India the Narmada basin is the key area. It is also because of these considerations that this basin holds a great potential for the find of the earlier tool-making hominid groups in India.

The trough nature of the c. Narmada valley formed by the tectonic processes favoured the massive accumulations of sediments, at places reaching over 150 m in thickness. The occurrence of sites of Mesolithic [4.5], Chalcolithic [4.14.5] and historical periods besides those of the Palaeolithic [4.2-4] show that the region provided suitable environment throughout the Quaternary. This mighty river forms a sort of barrier between n. and s. India but since it is fordable at some points it did not cause hindrance to n.-s. movements of animals and human beings at any time.

In view of the wealth of Pleistocene mammalian fossils and Palaeolithic tools of different periods the region has received attention of geologists, prehistorians and anthropologists alike. The earliest account of the Narmada beds was given in 1860 by Theobald who on the basis of invertebrate fauna divided these beds into two groups—lower and upper—and dated them to the Pleistocene period. Others who contributed in the 19th century Quaternary studies are Medlicot (1860), Oldham (1871), Blandford (1869), Lydekker (1880), Pilgrim (1905) and Vrendenburg (1906). Subsequent work was done by de Terra and Paterson, H.D. Sankalia, A.K. Ghosh, D. Sen, the writer, A.P. Khatri, S.G. Supekar, G. Armand, S.N. Rajaguru, V.S. Wakankar, etc., spread over different parts of the basin.

The first systematic work involving stratigraphic and cultural studies was carried out by de Terra and Paterson, 1939, in c. Narmada valley between Hoshangabad and Narsinghpur. The generalized sequence based upon de Terra's detailed examination of river sections in this area is as follows: On the basal quartzite rocks rests the laterite which is overlain in succession by three cycles of aggradational deposits comprising gravels and sands or silty clays. The lowest (first) group of bouldery gravel yielded Lower Palaeolithic Acheulian tools comprising handaxes, cleavers, scrapers, unifacial and bifacial choppers and cores made mostly on boulders and flakes of quartzites and rarely on the volcanic rocks. These tools have been equated by de Terra with the Sohan culture of the Potwar plateau in Pakistan [4.2]. A.P. Khatri tried to isolate the pebble element of this culture at MAHADEV PIPARIA and designated it as 'Mahadevian' as a parallel to the

DISTRIBUTION OF FAUNA IN PLEISTOCENE DEPOSITS AND THEIR
ASSOCIATED CULTURES, PROBABLE AGES ENVIRONMENT

Locality	Important fauna	Associated	Probable age	Environment
Kurnool, Ghod Manjra, Pravara, Godavari	<i>Cains</i> sp., <i>Bubalus</i> ssp., <i>Cervus</i> ssp., <i>Bos namadicus</i> , <i>Elephas hysudricus</i> , <i>Elephas maximus</i> , <i>Rhinoceros unicornis</i> , <i>Bos indicus</i> , <i>Hexaprotodon palaeindicus</i>	Bone tools, burins, blades, points (UP); scrapers, flakes, blades, points, borers (Late MP)	Late Upper Pleistocene (also dated by ^{14}C to 40000-15000 B.P.)	Savannah type with pockets of forests and swamps (humid in Kurnool)
C. Narmada (upper group)	<i>Equus namadicus</i> , <i>Bos namadicus</i> , <i>Hexaprotodon palaeindicus</i> , <i>Elephas hysudricus</i> , <i>Stegodon insignis ganesa</i> , <i>Cervus</i> ssp.	Scrapers, flakes, flake-blades, points, borers (MP); handaxes, cleavers, polyhedrals, discoids, choppers (Late Acheulian)	Early Upper Pleistocene	Savannah grassland interspersed with swamps
C. Narmada (lower group)	<i>Equus namadicus</i> , <i>Bos namadicus</i> , <i>Hexaprotodon namadicus</i> , <i>Sus namadicus</i> , <i>Elephas hysudricus</i> , <i>Stegodon insignis ganesa</i>	Choppers, handaxes, cleavers, flakes (LP, Acheulian)	Middle Pleistocene (not well-established)	Savannah grassland interspersed with swamps
Lower Karewa; Pinjor of upper Siwaliks	<i>Equus sivalensis</i> , <i>Rhinoceros sivalensis</i> , <i>Rhinoceros palaeindicus</i> , <i>Elephas hysudricus</i> , <i>Bos</i> sp., <i>Archidiskodon planifrons</i> , <i>Sivatherium giganteum</i>	No Stone age tools	Lower Pleistocene	Valley and open Savannah grassland with lakes and swamps

LP = Lower Palaeolithic; MP = Middle Palaeolithic; UP = Upper Palaeolithic

Oldowan in e. Africa. But Superkar's excavation at the same locality brought out different evidence in that he found no such separate pebble-tool horizon; on the contrary he got tools even of the Middle Palaeolithic [4.3] thereby indicating the complex character of the origin and age of this boulder conglomerate. The fauna associated with this industry consists of *Elephas*, *Hexaprotodon namadicus*, *Bos*, etc., and is assigned to the Middle Pleistocene (see table above).

The second (upper) group consisting of comparatively fine gravel and silt is separated from the lower by an irregular erosional contact. It is very rich in vertebrate fossils of *Bos*, *Bubalus*, *Elephas*, etc. (see table) datable according to de Terra and Teilhard de Chardin to the Upper Pleistocene. This horizon yields mostly flake tools of smaller dimensions than those of the preceding zone, consisting of varieties of scrapers, points, borers, flakes, some struck from prepared cores, small choppers and cores of the Middle Palaeolithic [4.3] cultures. On the top of these sediments lies the fine sandy gravel over which is the surface Black Cotton Soil [9.1].

The surface and near-surface deposits yield microlithic industries which at places show Upper Palaeolithic [4.4] characters but no definite Upper Palaeolithic horizon has as yet been established in the river deposits.

Owing to the occurrence of the same type of mammalian species in the lower and upper groups of the Older Alluvium of the c. Narmada and due to lack of suitable material for absolute dating of the Stone Age the stratigraphy as based on observations of the exposed river sections is somewhat defective. This is also borne

out from the bore-hole data. The alluvium in the c. Narmada reaches at places a depth of nearly 150 to 200 m. The boulder beds are generally seen throughout the depth and are commonly encountered near the steep escarpment of the Vindhyan hills on the n. Bore-hole data also show that the Narmada had swung from s. to n. during the Pleistocene.

The aggradational and erosional processes have however produced two distinct terraces. The surface of the Older Alluvium occurs at elevations varying from 15 to 30 m above the bed level of the present Narmada. The Younger Alluvium forms an inset terrace at 8 to 10 m level above the bed level. Unpaired meandering terraces are also seen at a number of places where the tributaries meet the Narmada. A single ^{14}C date (c. 32000 B.P.) of fresh-water shells collected from the gravel yielding Middle Palaeolithic tools, flourine and nitrogen tests carried out by Oakley on fossil bones from similar formations and the occurrence of animal species such as *Elephas maximus* and *Bos namadicus* indicate that the major part of the exposed Older Alluvium in the c. Narmada valley is of the late Pleistocene Age (less than 13000 years B.P.). The geologic formation of the Middle Pleistocene remains to be firmly established by geochronological methods.

Excavations in the rock-shelters at ADAMGARH, 2 km from Hoshangabad, and BHIMBETKA, 40 km on the n. bank of the river, in the basin have brought out a succession of cultures: Lower Palaeolithic (Acheulian), Middle Palaeolithic, Upper Palaeolithic, Mesolithic and Chalcolithic [4.14.5]. Compared to the river cliff-sections these sheltered sites are better preserved

localities as far as cultural evidence is concerned. They however lack supporting sedimentological or palaeontological and radiometric data.

The course of the Narmada downstream of Hoshangabad has not been studied systematically. It is only around MAHESHWAR (22°11'; 75°36') in Dt W. Nimar that Sankalia and the author noted Stone Age industries in the context of three cut-and-fill terraces. The basal gravel of the 30 m terrace yielded Lower Palaeolithic tools; the gravel of the 20 m terrace was found to be rich in Middle Palaeolithic tools; but the youngest inset terrace, 8 to 10 m did not yield any specific industry. The first two terraces appear to be of the middle to late Pleistocene and the third one is of the early Holocene [9.8.4]. Recently Armond excavated a terrace gravel (+15 m), 1 km away from the left bank of the Narmada and established a primary channel occupation site of the Lower Palaeolithic tradition. So far no biological remains have been found in association with Stone Age industries noticed around MAHESHWAR. The tools comprise large and heavy flakes of quartzite pebbles with pronounced bulb of percussion recalling Clactonian technique [16.15.1]. These have been limitedly flaked further into heavy scrapers or choppers. But generally bifaces are absent.

The lower Narmada from Chandod to the sea in Gujarat is a great shelf of coastal alluvium. Unlike the middle reaches the Narmada in this region has a highly meandering course. Fine sections of alluvium are exposed but excepting a few stray microlithic ones no sites have been found. Yet from the point of view of the determination of the past climatic conditions and Quaternary eustatic changes this coastal tract is important. In this region Wainwright has distinguished three buried soils and correlated them with three stadial phases of the Last Glacial [9.8.2]. The stratigraphically underlying horizon yielding Lower Palaeolithic tools upstream has been equated to the Last Interglacial [9.8.2]. The terraces occurring in the lower Narmada valley are ascribed by Allchin, 1972, to neotectonic activities which seem to have been responsible for the shaping of the lower Narmada valley.

Apart from the sites mentioned above, some of the important sites in the c. Narmada valley are listed below (LP = Lower Palaeolithic; MP = Middle Palaeolithic): **Jabalpur area:** BHERAGHAT (23°08'; 79°47'), MP.; **Narsinghpur area:** JHANSI GHAT (23°06'; 79°16'), MP; MAHADEO PIPARIA (23°06'; 79°16'), LP; MURGHAKHERA (23°05'; 79°16'), LP; DEVAKACHAR (23°23'; 79°07'), MP; RATIKARAR (23°01'; 79°06'), MP; and BARMANGHAT (23°02'; 79°02'), MP.

Allchin, B., Hegde, K.T.M., & Goudie, A., 1972, in *Jour. M.S. Baroda Univ.*, 19, pp. 15-32; de Terra, H., and Paterson, T.T., 1939, *Studies on the Ice Age in India & Associated Human Cultures*,

Washington. Joshi, R.V., 1978, *Stone Age Cultures of c. India*, Pune. Sankalia, H.D., 1974, *Prehistory & Protohistory of India & Pakistan*, Poona. Sen, D., & Ghosh, A.K., 1963, in *Rivista di Scienze Preistoriche*, 18, pp. 3-23; Wainwright, G.V., 1964, *Pleistocene Deposits of the Lower Narmada River & Early Stone Age Industry from the River Chambal*, Baroda.—R.V. JOSHI.

Narmala (22°15'; 70°09'), Dt Jamnagar. Late Harappa [4.10] site.

AI, 18 & 19, 1962 & 1963, p. 206.

Narsingha. See CHAMBAL VALLEY.

Narsinghgarh¹, Dt Damoh. Lower and Middle Palaeolithic [4.2, 3] site.

AI, 17, 1961, pp. 5-36.

Narsinghgarh², Dt Singhbhum. Lower Palaeolithic [4.2] site. See DHALBHUM.

Narsinghgarh Pachor, Dt Rajgarh. Site with Kayatha Ware [11.7].

Wakankar, V.S., 1976, in *Arch. Congress & Seminar, 1972*, Kurukshetra.

Narsinghpur, Dt Narsinghpur. Lower and Middle Palaeolithic [4.2, 3] tools and fossil animal bones were found in stratified deposits.

IAR 1963-4.

Narur, Dt N. Kanara. Early historical [4.18.11] site.

Information from A. Sundara.

Marwar, Dt Indore. Black-and-red ware (of unspecified nature).

IAR 1958-9.

Nasarpur, Dt Dhule. Microliths (of unspecified nature), Chalcolithic [4.14.6] remains and black-and-red pottery of the early historical period [4.18.9].

IAR 1958-9.

Nashinda, Dt Dhule. Chalcolithic [4.14.6] habitation and burial site.

IAR 1960-1.

Nasik (20°0'; 73°51'), Dt Nasik, an ancient town situated on both banks of the Godavari. Literary and epigraphical records are replete with references to the town and provide evidence of its unbroken history for nearly 2500 years. The earliest authentic mention of Nasik is in Patanjali's *Mahābhāṣya* (Chapter 6) which refers to it as Nāsikya and several Brāhmanical, Jaina and Buddhist texts record the existence of Nasik as a town and as a *deśa* or *janapada*. Inscriptions at Pandu Lena in the vicinity of the town refer to it as a *nagara* and describe the donations made by its inhabitants. Though the site had been carefully explored earlier by Bhagwanlal Indraji (*Gaz. Bombay Presidency*, 16, 1883, pp. 534-40) and by H. Cousens (*Progress Rep. ASI W. Circle 1908*, p. 29), it was taken up for excavation only in 1950-51 by the Deccan College Res. Inst. under H.D. Sankalia. Apart from Lower Palaeolithic [4.2] tools like cleavers, scrapers and handaxes recovered from the buried riverbed at Gangawadi, 15 km n.w. of Nasik, the excavation itself exposed cultural remains of five Pds.

Pd I, Chalcolithic. The characteristic pottery includes

the Jorwe Ware [11.11], grey ware and whitish red ware. Since a majority of the sherds is fragmentary, it is difficult to identify the shapes, but spouted vessels, bowls with or without carination and globular jars are definitely present. Together with this, microliths such as trapezes, lunates and blades made on chert and chalcedony also occur. There is a break between this and the subsequent Pd II.

Pd II, early historical. This Pd is divided into two phases, A and B, dated on the basis of finds from the 5th to the 3rd century B.C. and the 3rd century B.C. to the 1st century A.D. respectively. Pd II A has yielded remains of mud walls, floor levels and ring-wells [14.15], but a large amount of ash, burnt wood and charred pottery suggests that the habitation was destroyed several times by fire. The predominant pottery is the NBPW [11.16] together with the red, black-and-red and black wares. Other finds include: beads of semiprecious stones, bone, glass, shell and terracotta; terracotta skin-rubbers [18.4], wheels, human figurines [17.2], crucibles [16.4] and stoppers; iron objects like arrowheads, spearheads, caltrops [19.3.5], knives, chisels, ladles, rings and nails; stone querns and mullers [6.19]; and antimony rods [18.1]. Of great interest are the bone points having close similarities with those from Taxila. This cultural equipment continues into the subsequent Pd II B, the additions being uninscribed cast copper coins [3.1] and a few sherds of the Russet-coated Painted Ware [11.22].

Pd III, Roman contact. In this Pd sherds of the Samian ware and sprinklers and bowls of the Red Polished Ware [11.23] have been found. Though no structural remains occur, the recovery of a terracotta tile [14.6.5] suggests the use of well-built houses. The small finds comprise beads, terracotta and iron objects. On the basis of the Roman pottery this Pd has been dated from A.D. 50 to 200.

Pd IV, Muslim-Maratha. Remains of stone structures were found together with a coin of Akbar and one of Malhar Rao Gaekwad of Baroda. The pottery consists of the Celadon Ware [11.25] and glazed ware. A few pieces of polychrome glass bangles also occur. On the basis of these this Pd has been dated between 1400-1875.

Sankalia, H.D., & Deo, S.B., 1955, *Report on the Excavations at Nasik & Jorwe, 1950-51*, Poona.—H.P. RAY

Nasirpur, Dt Saharanpur. Site with OCW [11.5], also early historical [4.18.1] material.

IAR 1965-6; 1970-1.

Nataneri Hills, Dt Nilgiri. Megalithic [4.17.9] site.

Foot, R.B., *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Natarapalayam, Dt Dharmapuri. Megalithic [4.17.9] site with port-holed cists, cairn-packed cists and stone circles.

IAR 1967-8.

Natavadi, Dt Dhule. Middle Palaeolithic [4.3] site.

IAR 1958-9.

Nathamadu, Dt Coimbatore. Site with Russet-coated Painted Ware [11.22].

IAR 1962-3.

Nathkuva, Dt Panch Mahals. Lower Palaeolithic [4.2] tools including choppers, scrapers, cleavers and rough handaxes and Series II (Middle Palaeolithic [4.3]) were collected.

Sonawane, V.H., 1976, in *Arch. Congress & Seminar, 1972*, Kurukshetra.

Nathnagar, Dt Bhagalpur. Site with NBPW [11.16].

IAR 1958-9.

Natkalpalaiyam, Dt Coimbatore. A large number of Megalithic monuments [4.17.9], mainly large cairns, each surrounded by a circle of unusual height and uniformity, the stones tall and pointed.

Jour. Royal Asiatic Soc., N.S., 7, 1875.

Nattamedu¹ (Sircarsamakkulam), Dt Coimbatore. Neolithic [4.6.10] site. (Same as following?).

IAR 1957-8.

Nattamedu², Dt Coimbatore. Site with Russet-coated Painted Ware [11.22]. (Same as preceding and NATHAMEDU?).

IAR 1957-8.

Nattamedu³, Dt Madurai. Megalithic [4.17.9] habitation site with Russet-coated Painted Ware [11.22] and pottery painted with wavy lines.

IAR 1956-7.

Nattamedu⁴, Dt S. Arcot. Weathered sherds of Rouletted Ware [11.21] and beads of semiprecious stones, paste and glass and cylindrical glass-like objects. Perhaps the same as referred to by Maloney, 1976, who also mentions the find of amphorae [11.19].

IAR 1965-6. Maloney, C., 1976, in Stein, B., ed., *Essays on S. India*, Delhi.

Nattamedu⁵, Dt Tiruchchirappalli. Megalithic Black-and-red Ware [11.15.3].

IAR 1963-4.

Nattanpalaiyam, Dt Coimbatore. Megalithic [4.17.9] site with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Nattaveli, Dt S. Arcot. Early historical [4.18.12] site.

IAR 1965-6.

Nattika, Dt Trichur. Megalithic [4.17.10] site with urn burials.

IAR 1967-8.

Nattukkalpalayam, Dt Coimbatore. Megalithic [4.17.9] cists.

IAR 1960-1.

Nattuvattom, Dt Kozhikode. Rock-cut caves [4.17.10] with Black-and-red Ware [11.15.3].

IAR 1964-5.

Naugasai, Dt Purulia. Handaxes, cleavers, ovates and other tools of Acheulian assemblage [4.2] were recovered from the cliff sections of several streams. On

the basis of typology, patination and state of preservation the industry may be divided into an earlier and a later phase.

IAI 1967-8.

Naulagadh, Dt Monghyr. Site with NBPW [11.16].

Patil, D.R. 1962, *Antiquarian Remains in Bihar*, Patna, p. 337.

Naurangabad, Dt Hissar. Early historical [4.18.1] site.

Silak Ram, 1972, unpublished thesis, Kurukshetra Univ.

Navadgi, Dt Bijapur. Chalcolithic [4.14.8] site. See ALMEL.

IAI 1958-9.

Navadne, Dt Dhule. Middle (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) tools.

IAI 1962-3.

Navagam¹, Dt Bharuch. Middle (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) tools.

IAI 1969-70.

Navagam², Dt Junagadh. Harappa [11.3] and Red Polished [11.23] Wares.

IAI 1957-8.

Naval-Khera, Dt Meerut. Red Ware of the Sunga-Kushan period and medieval ware.

IAI 1966-7.

Navalpur, Dt Dhule. Palaeolithic and microlithic tools (both of unspecified nature).

IAI 1958-9.

Navapur, Dt Ahmadabad. So-called protohistoric site.

IAI 1972-3.

Nava Vaghpura (Jetpur), Dt Bharuch. Late Stone Age (Mesolithic [4.5]) site.

IAI 1969-70.

Navdatoli. See MAHESHWAR and NAVDATOLI.

Nave-Bavnur, Dt Dharwar. Early historical [4.18.11] site.

IAI 1961-2.

Navilkal, Dt Raichur. Chalcolithic [4.14.8], Megalithic [4.17.8] and early historical [4.18.11] site.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 123. AR Hyderabad Arch. Dept, 1935-6, p. 20.

Navinal (22°50'; 69°35'), Dt Kutch. Late Harappa [4.10] site corresponding to RANGPUR II B.

AI, 18 & 19, 1962 & 1963, p. 206.

Navur, Dt Nellore. Lower [4.2] and Middle Palaeolithic [4.3] site in the Venkatagireru valley.

IAI 1965-6.

Nawa, Dt Nagaur. Rich Mesolithic [4.5] site 40 km n.-w. of Sambhar on the old terrace of the Saraswati river opposite the village Lesua near Govindgarh.

Misra, V.N., 1978, in *Man & Environment*, 2, p. 74.

Nawabpeta, Dt Krishna. Early historical [4.18.9] site.

IAI 1961-2.

Nawadih, Dt Ranchi. Late Stone Age (Mesolithic [4.5]) site.

IAI 1965-6.

Nawagaon, Dt Ranchi. (Palaeolithic? [4.2]) handaxes.

IAI 1965-6.

Nawala, Dt E. Nimar. Microliths (of unspecified

nature).

IAI 1960-1.

Nawegaon, Dt Nagpur. Middle Stone Age (Middle Palaeolithic [4.3]) tools and microliths (of unspecified nature).

IAI 1961-2.

Nawkhala, Dt Chanda. Late Stone Age (Mesolithic [4.5]) tools.

IAI 1962-3.

Nayagaon, Dt Jhansi. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAI 1963-4.

Nayagarh, Dt Midnapur. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAI 1961-2.

Nayakanahalli, **Nayakkanahalli**, Dt Dharmapuri. Megalithic [4.17.9] burial and habitation site.

IAI 1969-70.

Nayakheda. See 4.6.3.

Nayapura, Dt Sehore. Painted rock-shelters [13] with large inscriptions in shell characters [20.4.2] on their roofs.

IAI 1959-60.

Nayudupet, Dt Nellore. Lower Palaeolithic [4.2] site.

IAI 1966-7.

Nazareth, Dt Tirunelveli. Located on the inland side of the Kudiraimoli *teri* [9.5] with flakes and fragments, blade cores and almond-shaped points. See SAWYER-PURAM.

AI, 12, 1956, p. 14.

Nazirabad, Dt Sitapur. Remains from the NBPW [11.16] to the medieval periods.

IAI 1962-3.

Nazirpur, Dt Lucknow. NBPW [11.16] site.

IAI 1964-5.

Nedungal, Dt Dharmapuri. Dolmenoid cists [4.17.9].

IAI 1965-6.

Neelgunda, Dt Bellary. Megalithic [4.17.8] site.

Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, p. 44.

Neemuch, Dt Mandsaur. Acheulian [4.2] cleavers and discoids were found in the Retam valley near Neemuch.

IAI 1956-7.

Nagai, Dt Jabalpur. Tools of Series I (Lower Palaeolithic [4.2]).

IAI 1958-9.

Nehla, Dt Hissar. Early historical [4.18.1] site.

Silak Ram, 1972, unpublished thesis, Kurukshetra Univ.

Nehur, Dt Bhavnagar. Red Polished Ware [11.23] in the Kalubhar valley.

IAI 1960-1.

Neidavasal. See KĀVERIPŪMPATTINAM.

Nekkundi, Dt Dharmapuri. Megalithic [4.17.9] burial sites.

IAI 1969-70.

Nellikuppam-vembedu, Dt Chingleput. Megalithic [4.17.9] site.

AI, 22, 1966, p. 30.

Nemalipuram, Dt Guntur. Megalithic [4.17.7] cist burials.

IAR 1961-2.

Nenmeni, Dt Kozhikode. Cists and Stone circles [4.17.10].

IAR 1960-1.

Neori-Gupta, Dt Sehore. Microliths (of unspecified nature) from painted rock-shelters [13].

IAR 1963-4.

Nepawali, Dt Dhar. Chalcolithic [4.14.5] site yielding sherds of Kayatha Ware [11.9].

IAR 1966-7; 1968-9. Wakankar, V.S., 1976, in *Arch. Congress & Seminar 1972*, Kurukshetra, p. 56.

Ner, Dt E. Nimar. Microliths (of unspecified nature).

IAI 1957-8.

Neradubandaguddu, Dt Srikakulam. Early historical [4.18.10] site.

IAI 1971-2.

Nerelagiri, Dt Dharmapuri. Megalithic [4.17.9] cists.

IAI 1964-5.

Neri-Budruk, Dt Jalgaon. Chalcolithic [4.14.6] site.

IAI 1962-3.

Nerinjikudi, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 1, 1, pp. 515-8.

Nerle, Dt Satara. Black-and-red ware (of unspecified nature), Red Polished Ware [11.23] and Satavahana coins were found on a mound.

IAI 1956-7.

Neruli, Dt Coimbatore. Megalithic [4.17.9] site with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Nesari (16°04'; 74°20'). See GHATAPRABHA VALLEY.

Nesur, Dt Belgaum. Neolithic [4.6.9]-Chalcolithic [4.17.8] site.

IAI 1965-6. P.B. Desai *Felicitations Vol.*, Dharwar, 1971, pp. 4-30.

Nethla, Dt Meerut. PGW [11.14] site.

IAI 1968-9.

Netra-Khirasara, Dt Kutch. Harappa [4.9] site.

IAI 1969-70.

Nattadahalli, Dt Dharmapuri. Megalithic [4.17.9] burial sites.

IAI 1969-70.

Nettamedu, Dt Pondicherry. Megalithic [4.17.9] site.

Casal, J.-M., & C., 1956, *Site urbain et Sites funéraires des Environs de Pondichéry-Virampatnam-Mouttrapaleon, Souttokeny*, Paris.

Nevari, Dt Pratapgarh. Site on the Khoilan lake under occupation from the late phase of the NBPW [11.16] to late historical times.

IAI 1968-9.

Nevasa (19°34'; 74°54'), Dt Ahmadnagar, situated on both banks of the Pravara, the n. called Nevasa Budruk and the s. Nevasa Khurd. Traditional accounts regarding Nevasa or the Godavari-Pravara valley are very few and the earliest reference dated to the 12th-13th century is found in the *Lilacaritra* and some manuscripts of the *Jñāneśvarī*. The site is variously called Nidhivāsa, or

Nidvāsa or Nivāsa. It was first explored by M.N. Deshpande of the ASI and regular excavations were undertaken by the Deccan College Postgraduate and Res. Inst. under H.D. Sankalia in 1954-6 and again in 1956-9 (IAI 1959-60, pp. 19-21; 1960-1, pp. 25-8). These revealed a sequence of six cultural Pds ranging from the Lower Palaeolithic [4.2] to the Muslim-Maratha times.

Pd I, Lower Palaeolithic. Lower Palaeolithic tools were found in the cemented gravel resting on the rock. This same layer also yielded a jaw fragment of *Bos namadicus* [15.1], a typical Middle Pleistocene [9.8.2] fossil. The material of these tools of olivine dolerite, a fine-grained variety of trap. Typologically they include handaxes, cleavers, flakes, cores, hammer-stones and choppers.

Pd II, Middle Palaeolithic [4.3]. This Pd is represented by the middle gravels (Gravel II) at Nevasa and the lowermost gravels at BEL PANDHARI, SUREGAON and KALEGAON, all on the GODAVARI. Associated with the tools at the last site is a complete skull of *Bos namadicus* Falc. A few flakes and cores definitely show a knowledge of the faceted platform technique [16.15.1], though a majority of the tools is a mixture of free-flaking or percussion by a soft cylinder hammer [16.15.1]. Besides flakes and cores, the other tool types are points, scrapers and borers. Genuine blades are completely absent and not a single burin has been found in a stratified deposit, though they have been collected as surface finds. But even though there is an absence of the true blade the industry shows all the characters of an incipient blade industry in the narrow thick parallel-sided blade-like flakes, flake-blades and cores showing the production of flake-blades.

Pd III, Chalcolithic [4.14.6]. The ceramic industry of this Pd consists mainly of four wares, of which the Jorwe Ware [11.11] is the most abundant, the other wares being the grey, coarse red and orange. The Jorwe Ware exhibits a number of special features at Nevasa. Thus, in addition to a matt surface, the ware shows the application of various slips, though the principal colour is red. Together with the regular shapes like spouted bowls, spouted vessels with a high neck and a squat body, a number of very small bowls, basins and ringed and stemmed stands also occur. A majority of the pots is wheel-made though some parts of certain vessels are made by hand in a mould. It is likely that bamboo baskets were also used for making clay vessels as is evidenced by a few thick sherds with perfect bamboo-matting impressions on them. Noteworthy among the painted designs are the representations of the dog and wavy-horned antelope, though most of the designs are geometric. A few pots also bear graffito marks [20.1].

Within this Pd at least five phases of occupation have been distinguished on the bases of floors and associated

burials. No complete house plans have however been exposed, though there is ample evidence to suggest the use of lime-plastered floors with wooden posts sunk into them. Huge storage jars with bold linear designs and tapering bottoms were embedded into the house floor. *Chulhas* are built right on the floor and are usually rectangular with arms formed by raised bands of clay. Of great interest is the occurrence of circular or oval pits dug into the virgin Black Soil [9.1] and the oblong or oval *kunda*-like constructions. The length, width and depth of the pits vary respectively from 1.2 to 2.7 m, 0.9 to 1.5 m, and 0.5 to 1.2 m. Not all the pits have plastered sides, nor do all of them contain Jorwe sherds. Only two of them have circular post-holes around the periphery. Hence it is difficult to say whether these were used as dwellings [14.13] or for storage though similar ones have also been found at INAMGAON. The *kundas* are either oval measuring 75 × 90 cm or oblong with diameters of 84 and 79 cm. They have a depth of about 25 cm and clay-plastered sides. Though some sort of ritualistic significance has been attributed to them, the evidence from INAMGAON suggests that they were more likely *chulhas*.

Under the house-floors of all five phases a total number of 131 burials [12.4] have been found. Of these 126 are of children and five of adults. In child burials two or at times three urns of grey fabric were placed horizontally mouth to mouth in a n.-s. orientation. The funerary goods associated with these comprise small painted bowls, small globular vessels, high-necked pots, tiny beads of faience [16.6], carnelian and copper and a copper anklet. Adults were buried in an extended position in a pit with a n.-s. orientation. The lower extremities are generally found to be missing.

The cultural equipment comprises: microlithic blades and flakes; polished stone axes; copper bangles, beads, rings, hooks, chisels [6.5] and a pot; beads of semiprecious stones, steatite and terracotta, terracotta skin-rubbers [18.4], lamps [6.11], pottery discs [6.7.3] and wheels [16.19], bangles of shell, and hammer-stones, anvils, querns and mullers [6.19].

On the basis of ^{14}C dates of 1250 ± 110 B.C. and 1250 ± 125 B.C. from the topmost layer of this Pd, the Chalcolithic occupation of the site has been dated between 1500 and 1000 B.C.

Pd IV, early historical [4.18.9]. A considerable gap intervenes between Pds III and IV, the latter marked by the emergence of the NBPW [11.16], the black-and-red ware, the Russet-coated Painted Ware [11.22], the coarse and slipped red pottery, tan-slipped ware and a kind of red-and-black ware. The cultural debris of this Pd shows six phases of occupation associated with the occurrence of lime floors, bricks and tiles. The evidence from Phase IV suggests the existence

of more-than-one-room tenements. Storage jars have been found embedded in floors and soak-pits have been identified. Noteworthy in the last phase of occupation is the use of stone blocks for some sort of pavement and the recovery of a group of three rotary querns and four saddle querns along with an iron object resembling a clamp.

The cultural equipment comprises: copper antimony rods [18.1], rings, blades, hooks and rods; iron arrowheads, chisels, knife-blades, sickles, adzes, ladles, and pots and pans; glass rings, small vessels and slag; bone point; ivory combs; [18.3] and terracotta crucibles [16.4], toys and human figurines.

On the basis of punch-marked [3.1] coins, uninscribed cast coins and coins of Siri Sātavāhana, the beginning of habitation of this Pd has been dated to the first half of the 2nd century B.C.

Pd V, Indo-Roman. The *terminus quo* of the preceding Pd and the beginning of Pd V are evidenced by the introduction of the Red Polished Ware [11.23], the Megaron Ware [11.18], the Rouletted Ware [11.21] and amphorae [11.19]. Together with these the black-and-red ware continues as also the tan ware, coarse red ware and a ware with a red wash. Two pieces of the NBPW [11.16] also occur.

The general features of six phases of habitation of this Pd remain mostly the same as those of the preceding Pd, including the use of lime floors, embedding of storage jars in the floors and wooden posts supporting the roof. However there is the introduction of certain new features also, such as the extensive use of tiles for roofing, brick walls, elaborate foundations, brick and ringed soak-pits and the association of burnt grains with almost each phase.

Noteworthy among the small finds are: a cobra-headed bead of gold; monochrome glass bangles; pulley-shaped ear-ornaments of shell; decorated ivory bangles; votive tanks [12.11]; and elaborate mother-goddess [12.6] figurines.

The most important evidence is provided by the coins of Gautamīputra and Yajña Sātakarni and the imitations of Roman bullae [6.4], particularly those which imitate the coins of the Roman emperor Augustus. The ^{14}C date for the charred grains is 1846 ± 106 B.P. Thus Pd V has been dated from the 1st century B.C. to the 2nd century A.D.

Pd VI, Muslim-Maratha. The site seems to have been uninhabited after the 3rd century A.D. and reoccupied only in the 14th century. This occupation is evidenced by coins and extensive remains of stone foundations.

Sankalia, H.D., Deo, S.B., Ansari, Z.D., & Ehrhardt, S., *From History to Pre-history at Nevasa (1954-56)*, Poona, 1960.—H.P. RAY Newabas, Dt Saharanpur. Harappa [4.9] site.

IAR 1965-6.

Newal, Dt Unnao. NBPW [11.16] site.

IAR 1962-3.

Newegaon (Kheri), Dt Nagpur. Middle Stone Age (Middle Palaeolithic [4.3]) tools and microliths (of unspecified nature).

IAR 1969-70.

Neyveli, Dt Chingleput. See ATTIRAMPAKKAM.

Niaon, Dt Ghazipur. Microliths (of unspecified nature).

IAR 1962-3.

Nibbel, Dt Dhule. Microliths (of unspecified nature) and Chalcolithic [4.14.6] burial remains.

IAR 1961-2.

Nibiya Khera, Dt Kanpur. Mounds (of unspecified nature).

IAR 1970-1.

Nichchampalaiyam, Dt Coimbatore. Megalithic [4.17.9] cairn circles, cist burials and three menhirs each circumscribed by a single stone circle.

IAI 1961-2.

Nichitpur, Dt Ranchi. Microliths (of unspecified nature).

IAI 1965-6.

Nidaghatta, Dt Chikmagalur. Lower Palaeolithic [4.2] and Megalithic [4.17.8] site with stone circles.

Seshadri, M., 1956, *Stone-using Cultures of Pre- & Proto-historic Mysore*, London, p. 15.

Nidagundi(kop), Dt Dharwar. Stone axes, microliths and fragments of grey ware of BRHMAGIRI fabric.

IAI 1967-8.

Nidana¹, Dt Karnal. Late Harappa [4.10] site comparable with MITATHAL II B.

Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 125.

Nidana² (Khaghhalala), Dt Rohtak. Site with PGW [11.14], black-and-red ware, Black-slipped Ware [11.13] and early historical [4.18.1] pottery.

Jour. Haryana Studies, 3, p. 4.

Nidigullu. See BOGGERU VALLEY.

Nidugula, Dt Nilgiri. Megalithic [14.17.9] site with cairns.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Nighoj, Dt Ahmadnagar. Tools of Series II (Middle Palaeolithic [4.3]), microliths (of unspecified nature) and sherds of thick grey ware and early historical pottery characterized by black-and-red and red wares.

IAI 1960-1.

Nijhar, Dt Dhule. Microliths (of unspecified nature) associated with ochre-coloured pottery. See DHAMDAL.

IAI 1957-8.

Nigohi, Dt Shahjahanpur. Early historical [4.18.1] site.

IAI 1966-7.

Nigudghar, Dt Pune. Late Stone Age (Mesolithic [4.5]) site.

IAI 1969-70.

Nikkalapalli, Dt Dharmapuri. Dolmenoid cists [4.17.9].

IAI 1965-6.

Nilambur, Dt Coimbatore. Port-holed cists [4.17.9].

AI, 4, 1947-8, p. 306.

Nilayapatti, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 1, 1, pp. 515-8.

Nilgavan, Dt Dhule. Middle (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) site.

IAI 1963-4.

Nilgiri, Dt Bankura. Microliths (of unspecified nature).

IAI 1959-60.

Nilugondla, Dt Kurnool. Black-painted red ware and Megalithic Black-and-red [11.15], Russet-coated Painted [11.22] and Rouletted [11.21] Wares.

IAI 1963-4.

Nimawar, Dt Dewas. Middle Stone Age (Middle Palaeolithic [4.3]) tools and microliths (of unspecified nature) were found on the n. bank of the NARMADA.

IAI 1962-3.

Nimbahera, Dt Chittaurgarh. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3]) tools were collected from the pebbly and sandy gravels of the river Kadamali, a tributary of the Gambhiri.

IAI 1963-4.

Nimbal, Dt Bijapur. Microlithic (of unspecified nature) site.

IAI 1956-7.

Nimbapur(a), Dt Bellary. Ash-mound [14.3] and Chalcolithic [4.14.8] site.

Allchin, F.R., 1963, *Neolithic Cattle-keepers of s. India*, Cambridge, p. 52. Foote, R.B., 1916, *Indian Prehistoric & Proto-historic Antiquities*, Madras.

Nimbhere, Dt Ahmadnagar. Early historical [4.18.9] site.

IAI 1959-60.

Nimbhor, Dt Akola (?). Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAI 1965-6.

Nimbudera (12°44'; 92°55'), Dt Andamans. Lower Palaeolithic site (?).

Geological Survey of India News, 4, 6, 1972, p. 11.

Nimkhed, Dt Jalgaon. Sherds of black-and-red ware of the early historical [4.18.9] period.

IAI 1958-9.

Nimkheda, Dt Jabalpur. Series II (Middle Palaeolithic [4.2]) tools.

IAI 1959-60; 1960-1.

Nimmurla, Dt Bolangir. Microliths (of unspecified nature).

IAI 1963-4.

Nimsur, Dt Sitapur. Large mound on the bank of the Gomati yielding OCW [11.5], NBPW [11.16], Black-slipped Ware [11.13] and medieval glazed ware.

IAI 1969-70.

Ninniur (Udayarpalaiyam), Dt Tiruchchirappalli. Lower Palaeolithic [4.2] tools.

Foote, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Niorai, Dt Etawah. Copper Hoard [4.11] site producing

as harpoon and hooked sword.

AI, 7, 1951, p. 38A. Also information from S. Asthana.

Nir, Dt Jullundar. Śuṅga-Kushan and medieval glazed wares.

IAR 1963-4.

Nirandpur, Dt Jabalpur. Microliths and black-and-red ware (both of unspecified nature).

IAR 1959-60.

Nirbhaitala, Dt Bankura (?). Chalcolithic black-and-red ware.

IAR 1965-6.

Nirchak, Dt Dhule. Lower and Middle Palaeolithic [4.2, 3] site.

IAR 1959-60.

Nirgudia, Dt E. Nimar. Microliths (of unspecified nature).

IAR 1960-1.

Nirpalpur, Dt Saharanpur. OCW [11.5] site.

IAR 1964-5.

Nirvanhatti, Dt Belgaum. Megalithic [4.17.8] site.

IAR 1966-7.

Nishahar, Dt Deoria. NBPW [11.16] and Buddhist remains.

IAR 1962-3.

Nitpalli, Dt Dharwar. Early historical [4.18.11] site. See ANVERI.

IAR 1959-60.

Nittur¹, (15°32'; 76°50'), Dt Bellary, on the right bank of the Tungabhadra at a distance of 48 km n.-w. of Bellary and 5 km w. of TEKKALAKOTA, the area around the village being dotted with hillocks and streams. In 1963-4 Ansari (Ansari, 1970, pp. 1-7) found pebble tools in association with the remains of *Bos* on the right bank of the river, which has a fine cliff section, about 4-5 m high from the river (*IAR* 1963-4, p. 24). Here a cemented pebbly gravel is capped by highly *kankarized* red silt, which in turn is overlain by a thin layer of black soil (Sankalia, 1974, pp. 72-4). The conglomerate has been eroded at a number of places, thus probably releasing the tools and animal remains embedded in it. Among the 31 collected pebble tools, all made on dyke basalt, 11 are unifacial and 13 bifacial. The unifacial choppers show four types of working edges: (1) pointed, (2) straight, (3) convex, and (4) concave. In the bifacial group there are (1) edge around the periphery, (2) cleaver-like edge and (3) convex edge. The fossils include the remains of vertebrae and a skull and horns of *Bos namadicus*. This discovery is significant in that for the first time pebble tools of the chopper-chopping tradition have been discovered in the peninsular handaxe region [4.2].

Recently a few fluted cores of jasper have been picked up from the ancient site near the Sukradappana hill, flakes having been removed out of them. A few well-polished Neolithic [4.6] axes of celts worked on basaltic

dyke have been collected from the slope and rain-gullies of the same hill. They have pointed butt-ends and lenticular sections. The working edge is generally convex but at times straight.

There are a few Megalithic stone circles [4.17.8] at the site approximately 100 m to the s. of the Aśokan edicts (see below). The diameter of these circles is not uniform and some of them are much disturbed by cultivation. A few Megalithic pit burials similar to those of B (ii) of MASKI exposed in a section of a large pit dug by the people have been found by A. Sundara. On the flat surface of the top of the hill are a few circular alignments [4.17].

Recently two Aśokan Rock-edicts have been discovered here by the writer at the foot of a hill range locally known as Sukradappana-gudda. Their contents are almost exactly similar to those of MASKI and BRAHMAGIRI. Besides there are Kannada inscriptions on two pillars in the village proper, one of the Kalyaṇi Cālukyas and the other of Sadaśivarāya of Vijayanagara.

Ansari, Z.D., 1970, in *Indian Antiquary*, 3rd series. Sankalia, H.D., 1974, *Prehistory & Protohistory of India & Pakistan*, Poona.—K. VENKATESWARA RAO

Nittur¹, Dt Dharwar. Early Stone Age (Lower Palaeolithic [4.2]) and also early historical [4.18.11] site. *IAR* 1961-2.

Nivalkhodi, Dt Bijapur. Thick coarse grey ware with a negligible proportion of Jorwe Ware [11.11] associated with ribbon flakes [16.15.2] of chert.

IAR 1958-9.

Nividia Khurd, Dt Ujjain. Historical site (of unspecified nature).

IAR 1971-2.

Niyamu, Dt Muzaffarnagar. Pottery ranging from the PGW [11.14] to medieval ware.

IAR 1964-5.

Niyardih, Dt Varanasi. NBPW [11.16] and other associated wares.

IAR 1961-2.

Nizampur¹, Dt Bulandshahr. Site with grey ware.

IAR 1962-3.

Nizampur², Dt Dhule. Microliths (of unspecified nature).

IAR 1959-60.

Noadiha, Dt Mirzapur (?). Middle Stone Age (Middle Palaeolithic [4.3]) tools comprising blades, flakes, scrapers and cores.

IAR 1962-3.

Nochchikuppam, Dt S. Arcot. Pottery of different types, ranging from thick and well-fired variety to medium fabric in grey ware and a sherd simulating the Celadon Ware [11.25] were found.

IAR 1955-6.

Noh, Dt Bharatpur, 6-5 km w. of Bharatpur on Agra-

Bharatpur road, where a stone *yakṣa* statue had been previously recovered and PGW [11.14] and NBPW [11.16] sherds picked up (IAR 1955-6, p. 71), excavated during 1963-7 by the Dept of Arch., Rajasthan, in the first season in collaboration with J. Le Roy Davidson of the Univ. of California (IAR 1963-4, p. 28; 1964-5, p. 34; 1965-6, p. 38; 1966-7, p. 30). Five Pds have been identified.

Pd I, OCW. In a 90 cm thick deposit sherds of the OCW [4.12] have been met with, one of them with incised decoration, fragments of a handle being the only recognizable shape. The deposit is said to have produced iron as well [Agrawala, 1976, p.], though details are not available.

Pd II, black-and-red ware. The unpainted black-and-red ware [11.6.3], unlike that from AHAR², and Black-slipped Ware [11.13] are characteristic. There is no metal or stone object.

Pd III, PGW. Along with the PGW the Black-slipped Ware and black-and-red ware of the preceding Pd are met with. A lid in the PGW with a painted bird atop is interesting. Beads, terracotta discs with scalloped or angular designs at the rim, bone styli, one with a socket cover, iron spearheads and an arrowhead with leaf-shaped point socketed tang and an axe and copper objects form the other antiquities. Charred rice [2.2] is an important discovery in the Pd.

Pd IV, NBPW. The NBPW has various surface hues, coal-black, steel-grey, silvery and golden, and occurs along with plain grey ware. There are iron and copper objects, uninscribed cast coins [3.1] and terracotta figurines. Three phases of mud-brick (40 × 20 × 6 cm) structures have been noticed. There is no gap between this and the preceding Pd.

Pd V, early 2nd century B.C. to late 3rd century A.D. The Śuṅga and Kushan levels have eight structural phases, the use of baked brick (39 × 23 × 5.5 and 29 × 23 × 5.5 cm) being common. A covered drain, four-armed and two-armed hearths and a cistern, 50 × 43 × 20 cm, perhaps for offering oblations, are the other structural remains. The pottery is typical of the age: the bowl; lid-cum-bowl, lipped bowl with small spout; and pottery stamped with *tri-ratna*, and *svastika* designs. Terracotta human figurines with elaborate coiffure and jewellery including a couple in amorous pose and the goddess Vasudhārā, animal figurines of the horse and bull, toy carts, skin-rubbers [18.4], antimony rods [18.1], bangless of shell, glass, etc., a pottery's stamp, coins of Mitra rulers of Mathura and beads of terracotta and shell and glass are the other finds.

A cutting on the w. slope of the mound has shown a phase of the poverty and decadence of the site in the 7th-8th century. The numerous pits dug all over the site have yielded a number of stone plaques and the palm of

a life-size Buddha or *yakṣa* in white-spotted red sandstone.

Agrawala, R.C., 1976, in *Arch. Congress & Seminar 1972*, Kurukshetra.—A. GHOSH

Nohar, Dt Ganganagar. Site with SOTHI/KALIBANGAN I Ware [11.2], Harappa Ware [11.3], early historical and medieval wares and coins. See DRSADVATI VALLEY. IAR 1972-3.

Nohari, Dt Meerut. Historical mound (of unspecified nature).

IAR 1970-1.

Nokhera, Dt Etah. Site with PGW [11.14] and NBPW [11.16].

IAR 1960-1.

Nongadh, Dt Monghyr. Mound with Buddhist remains including a temple assigned to the 1st century A.D. or B.C. ASI—AR, 3 pp. 160-2; 8, pp. 118-20. ASI—AR, Bengal Circle 1903-4, p. 12.

Non river, Dt Gwalior. Early Stone Age (Lower Palaeolithic [4.2]) tools consisting of handaxes, cleavers and scrapers were found on the surface of the river banks.

IAR 1968-9.

Noorabad, Dt Morena. Chalcolithic [4.14.5] site on the bank of the Sonkh yielding sherds of the Malwa Ware [11.10] arecanut shaped bead, sling stones and a small iron dagger belonging perhaps to the historical period.

IAR 1968-9.

North Hill, Dt Bellary. Neolithic [4.6.9] implements.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Nothala, Dt Surat. Mesolithic [4.5] site on the Valmiki or Jhankhari river.

IAR 1968-9.

Noughati, Dt Rewa. Middle Stone Age (Middle Palaeolithic [4.3]) tools and microliths (of unspecified nature).

IAR 1961-2.

Nowgawan, Dt Mirzapur. Megalithic [4.17.3] site.

IAR 1969-70.

Nuaberi (22°3'; 86°40'). See KULIANA.

Nummer, Dt Monghyr. Lower Palaeolithic [4.2] site.

D.K. Burman, 1976, in *Arch. Congress & Seminar*, Kurukshetra, 1972.

Nunand, Dt Rohtak. Early historical [4.18.1] site.

Jour. Haryana Studies, 3, 1, p. 5.

Nunia, Dt Midnapur. Microliths (of unspecified nature) and flakes.

IAR 1961-2.

Nuran Kheda, Dt Rohtak. PGW [11.14] and early historical [4.18.1] site.

Jour. Haryana Studies, 3, 1, p. 4.

Nurnagar, Dt Muzaffarnagar. Site yielding PGW [11.14], grey ware, NBPW [11.16], Śunga-Kushan red ware, medieval glazed ware, terracotta figurine, dabber [16.11], beads, gamesmen, a tablet with three parallel lines and a bone needle.

IAR 1963-4.

Nurpur, Dt Jullundar. Mound yielding early historical [4.18.1] and late historical [4.19.1] wares. Among the early historical pottery mention may be made of the red and plain grey wares. Shapes in the late historical red ware included the knife-edged bowl, shallow dish-cum-bowl, knobbed lid, deep basin and vase.

IAR 1972-3.

Nurudih, Dt Ranchi. Stone Age site yielding tools of the Middle (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) industries. The latter includes scrap-

ers, points, burins and backed blades.

IAR 1968-9.

Nyahali, Dt Dhule. Microliths (of unspecified nature), and Chalcolithic [4.14.6] habitation remains.

IAR 1961-2.

Nyalakondapalli, Dt Khamman. Russet-coated Painted Ware [11.22].

AI, 4, 1947-8, p. 310.

Nyamti, Dt Shimoga. Lower Palaeolithic [4.2] site.

Foots, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Oblapura, Dt Kolar. Megalithic [4.17.8] site with stone circles and cists.

Information from C. Krishnamurthy through A. Sundara. *IAR* 1972-3, p. 27.

Oblesapalli, Dt Dharmapuri. Megalithic [4.17.9] cists.
IAR 1964-5.

Odanur, Dt Palghat. Microliths (of unspecified nature) site.
IAR 1971-2.

Oduganpatti, Dt Pudukkottai. Megalithic [4.17.9] site.
Manual of Pudukkottai State, 1944, 1, 1, pp. 515-8.

Odugattur, Dt N. Arcot. Megalithic [4.17.9] site.
Jour. Royal Anthropological Inst., 54, 1921, pp. 157-65.

Ojharda, Dt Dhule. Mesolithic [4.5] and microlithic (of unspecified nature) site.
IAR 1960-1; 1966-7.

Olchibag, Dt Anantanag. Neolithic [4.6.1] assemblage and dwelling pits similar to those found at BURZAHOM.
IAR 1962-3.

Old Vilangudi, Dt Madurai. Urn burial site [4.17.9] without megalithic appendage.
IAR 1956-7.

Oliyamangalam, Dt Pudukkottai. Megalithic [4.17.9] site.
Manual of Pudukkottai State, 1944, 1, 1, pp. 515-8.

Ompalagutta, Dt Dharmapuri. Megalithic [4.17.9] tombs.
IAR 1965-6.

Omto, Dt Ranchi. Prehistoric site yielding a heavy broad-bladed axe made of highly polished ornamental quartzite.

Roy, S.C., 1916, in *Jour. Bihar & Orissa Res. Soc.*, 2, pp. 65-6.

Onaur, Dt Allahabad. Habitation site with grey ware with painting of the same type as KAUSĀMBĪ. The other types included the bowl with a square everted or clubbed rim, dish, basin, lid, cooking vessel, some with a marked carination, and dough plate. The pottery was sturdy in fabric and had sometimes painted or incised designs, some of the types identical with those associated with the early periods of the defences of Kausāmbi.

IAR 1959-60.

Ongole, Dt Prakasam. Middle and Upper Palaeolithic [4.2, 3] site with Acheulian handaxe, choppers and flakes.

Aiyyappan, A., 1942, *Manley Collection of Stone Age Tools*, Mem. ASI, 68, p. 7.

Oostapalli, Dt Krishna. Lower Palaeolithic [4.2] site.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Oraghar, Dt Gonda. NBPW [11.16] and coarse red ware.

IAR 1961-2.

Orarheen-ka-kot, Dt Ghazipur. NBPW [11.16].
IAR 1963-4.

Orawa, Dt Allahabad. Upper Palaeolithic [4.4] factory site.
IAR 1969-70.

Organda, Dt Midnapur. Microliths (of unspecified nature).
IAR 1960-1; 1961-2.

Oriup, Dt Bhagalpur, 2 km s.-w. of ANTICHAK, the site of ancient Vikramasīlā, with surface finds of a large number of black-and-red ware [11.6.4] sherds, elongated lipped bowls painted white and a few NBPW sherds [11.16] of silvery hue. Two trenches, ORP-1A and -2A, each 6 × 4 m, excavated here by the Dept of Ancient Indian History and Arch., Univ. of Patna, in 1966-7 (*IAR* 1966-7, p. 6) have revealed four Pds.

In Pd I have been exposed an oven and a circular fire-place 26 cm in diameter. The ceramic assemblage comprises sherds of plain and painted black-and-red ware, NBPW, Black-slipped Ware [11.13] and red ware. The other finds include an archaic terracotta temple figurine, copper bangle, microlithic core, fish-hooks and points of bone, fluted terracotta pieces of the shape of pipe possibly used for fishing, pieces of tortoise shell probably used as a scraper and knife. Besides, talismen [12.1] and styli [20.5] made of bone, beads of agate and carnelian and terracotta female figurines have been met with ORP-1A, unlike ORP-2A, does not show any trace of erosion or silt deposit. The black-and-red ware in ORP-2A may relate the site to other Chalcolithic sites in Bihar and c. India [4.14.3, 5].

Pd II is evidenced by the occurrence of the NBPW along with black-slipped, grey and red wares, fragmentary pieces of black-and-red ware and red ware with perforations and a few objects of iron, such as spear-heads and nails. An ivory comb, glass, stone and terracotta beads, ivory and terracotta bangles, terracotta chisels, bone styli, female figurines, fish-hooks, a Neolithic stone celt and sledge-hammer have also been found. That the site was deserted after the end of Pd II is

indicated by weathered potsherds. The entire area of this Pd was affected by river action.

Pd III has revealed typical Pāla pottery consisting of a plain red ware with chocolate slip, plain grey ware and grey ware with black slip. The other finds are beads and seals of terracotta, pipe for smelting metal, metal slag and iron nails.

Medieval green-glazed pottery and red ware sherds are encountered in Pd IV.

—A. BANERJI

Oriyo (Chiroda), Dt Bhavnagar. Harappa [4.9] and early historical [4.18.2] site.

IAR 1971-2.

Oskea, Dt Ranchi. So-called Asura [14.4] burial site with smelting kiln. Copper ornaments and stone beads were occasionally recovered from the cinerary urns, as also a stone mace or hammer.

Jour. Bihar & Orissa Res. Soc., 1, 1915, pp. 244-5.

Osrel, Dt Dhule. Chalcolithic [4.14.6] habitation site and burial remains.

IAR 1961-2.

Othikal, Dt Bijapur. Thick coarse grey ware with ribbon flakes [16.15.2] of chert.

IAR 1958-9.

Ottakalmantapan, Dt Coimbatore. Site with Russet-coated Painted Ware [11.22].

IAR 1957-8.

Ottu (29°30'; 74°54'), Dt Hissar. Site with red ware (of unspecified nature) and Rang Mahal Ware [11.24].

IAR 1966-7; 1967-8.

Ozham, Dt Kanpur. PGW [11.14] and NBPW [11.166] site.

IAR 1970-1.

Ozhur, Dt Malappuram. Megalithic [4.17.10] site with umbrella-stones.

IAR 1970-1.

P

Pabra, Dt Hissar. PGW [11.24] and early historical [4.18.1] site.

Silak Ram, 1972, unpublished thesis, Kurukshetra Univ.

Pabumath (23°37'; 70°31'), Dt Kutch. Fairly high mound yielding Harappa [11.3] red buff, black-painted red 'reserved slip' and coarse red wares. Both in shape and in painted designs, the pottery shows similarities with RANGPUR II A, II B and II C. Three varieties of 'reserved slip' ware were found: (i) painted in black over dark-grey slipped surface, (ii) painted in red over a light-red surface, and (iii) painted in chocolate over light-grey surface. Sherds of coarse black-painted red ware, akin to the Rang Mahal Ware [11.24], and red-slipped cream ware were also met with.

IAR 1965-6. *Purātattva*, 8, 1975-6, p. 159.

Pachad (18°14'; 73°24'), Dt Kolaba, 22 km from Mahad, where previous exploration has brought to light a few microliths and a unifacial chopper from inside the cave. Subsequent excavation by the ASI (IAR 1969-70, p. 23; 1970-1, p. 22) in the cave in the volcanic trap of the area located about 450 m above mean sea-level has revealed two circular openings inside, measuring 10 × 10 m on the s. side. Two trenches—one at the n. entrance and the other in the e. side of the cave—reached a maximum depth of 1.5 m of which a 5 cm thick deposit contains a loose brown dust on the surface underlain by a 15 cm thick light or ashy earth. Below this is a deposit of rock rubble mixed with brown earth. From this level short, retouched and plain blades, points and a few blade cores have been recovered. This level has been found disturbed by modern pits with a perforated terracotta disc, small bits of charcoal, pottery and fragments of bone. The cave deposit comprises fallen rock fragments and a wind-blown dust from the platform surfaces below, over which modern villages are situated.

Further excavation has led to the discovery of a compact deposit in two trenches, 1.5 × 1.5 m each, near the facade of the cave. The 10 cm thick uppermost deposit containing loose, ashy brown earth mixed with small weathered blocks of trap has microliths, pottery, animal bones and charcoal bits and ash. A large number of potsherds, microliths, iron arrowheads, small bones and charcoal bits have been recovered from the intermediate stratum composed of light-brown earth mixed with rock rubble down to 60 cm from surface, while from the

lowest one, of compact brown earth on the sloping bed rock, has yielded a good number of microliths comprising retouched points, blades, flakes, fluted cores and hammer-stones. The depth reached here is 80 cm.

Though meagre, a few microliths, pottery and charcoal bits have been discovered in the trench on the e. side of the cave. The 20 cm deposit consists of ashy-brown earth with a compact yellowish-brown soil below, with large blocks of debris and boulders from a sterile deposit between 55 cm and 1 m (See KANDIVLI).

Joshi, R.V., & Bopardikar, B.P., 1972, in *Arch. Congress & Seminar Papers*, Nagpur, p. 49.—A. BENERJI

Pachala, Dt Tonk. Kushan red ware and bricks.

IAR 1971-2.

Pachapalaiyam, Dt Coimbatore. Megalithic [4.17.9] site.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras, p. 220.

Pachchaganapatti, Dt Dharmapuri. Megalithic [4.17.9] tombs.

IAR 1965-6.

Pachilana Bil, Dt Ujjain Historical site (of unspecified nature).

IAR 1971-2.

Pachimto, Dt Chittaurgarh. Black-and-red ware. See KADUKOTA.

IAR 1957-8.

Pachmarhi (22°30'; 78°22'), Dt Hoshangabad, the painted rock-shelters [13] of which have been extensively explored and studied (Hunter, 1935, 1936, who also excavated microliths [4.5] from the floors of the shelters; Gordon, 1935a, b, 1936, 1939a, 1939b, 1940, 1958). These Mahadeo hill rock-shelters, with Pachmarhi as the centre, form one of the richest groups of their class, the ones at Pachmarhi itself being known as Dorothy Deep, Upper Dorothy Deep, Monte Rosa, Mahadeo, Bazar, Jambu Dwip, Nimbu Boj and Marodeo. The shelters at Tamia, Son Bhadra and Jalai are respectively 32, 40 and 64 km away from Pachmarhi. Gordon studied the style, contents and superimpositions of the paintings and was not willing to assign a Stone Age antiquity to any group of them, but his views have now been superseded by the more detailed studies [13; BHIMBETKA], which have shown a Mesolithic [4.5] origin of the art continuing down to historical times. Of the more interesting paintings at Pachmarhi are a 'Gil-

gamesh' figure subduing two wild animals at Monte Rosa and a scene of rare humour in which a monkey standing on its hind legs plays on a flute while a man lying on a cot too small for his size has raised arms as if to keep time with the flute, in Upper Dorothy shelter. The other scenes are the usual domestic, pastoral, hunting and fighting scenes.

In 1940 the writer visited all the Pachmarhi shelters known to Gordon and discovered two additional important ones named by him Bania Beri (which is in a reality a cave) after the nearest locality, and Dhuandhar near a waterfall, which is very rich in superimposed paintings. In the Bania Beri cave, among other subjects in depicted a large cross around which is a group of men, most of them holding in their hands what may be raised umbrellas. The cross may be a primitive or conventionalized *svastika*. One of the cows appearing below the cross has her belly cut open to reveal a calf in a crouching position inside. In the same cave there is another painted cross composed of small triangles which look like having been made out of a stencil (Lal, 1950). Another example of stencil work had been found by Gordon, 1939a, at Kabra Pahar in Dt Raigarh.

The writer also excavated a small trench in the flat area in front of the Bazar Shelter and found an enormous number of microliths both geometric and non-geometric, cores and waste flakes but no pottery.

Gordon, 1935a, in *Illustrated London News*, Sep. 21; 1935b, in *Ipek*; 1936, in *Indian Arts & Letters*, 10, 1, pp. 31-41; 1939a, in *Science & Culture*, 5, 5, pp. 269-70; 1939b, in *ibid.*, 5, 6, pp. 322-7; 1940, in *ibid.*, 5, 10, pp. 574-84; 1958, *Prehistoric Background of Indian Culture*, Bombay, pp. 99-117. Hunter, G.R., 1935, in *Nagpur Univ. Jour.*, p. 28; 1936, in *ibid.*, p. 127. Lal, B.B., 1950, in *Archaeology in India*, Delhi, p. 47.—A. GHOSH

Pachur, Dt N. Arcot. Megalithic [4.17.9] burial site.

IAR 1964-5.

Pachwad, Dt Satara. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1962-3.

Padaguru, Dt Mysore. Megalithic [4.17.8] cairn circles.

IAR 1972-3.

Padaliya (24°30'; 74°30'), Dt Chittaurgarh. Six flat copper celts [4.11] similar to those from GANESHWAR were found. The celts possibly originated from the ancient site of Pind, 3 km away.

Agrawala, R.C., 1979, in *Man & Environment*, 3, p. 91.

Padalur, Dt Tiruchchirappalli. Megalithic [4.17.9] site with stone circles having single or double rings, cairn circles and dolmenoid cists, mostly of undressed boulders.

Gururaja Rao, B.K., 1971, in *Prof. Nilakanta Sastri Felicitation Vol.*, Madras.

Padamatikambhampadu, Dt Nellore. Middle Stone Age (Middle Palaeolithic [4.3]) tools were found in the Bairavlakonalingalavagu valley.

IAR 1965-6.

Padamatipadu. See DODLAVAGU VALLEY.

Padamdungari, Dt Valsad. Stone Age site (of unspecified nature).

IAR 1965-6.

Padam Tekri, Dt Valsad. Middle Stone Age (Middle Palaeolithic [4.3]) site yielding scrapers, points and cores.

IAR 1965-6.

Padardi, Dt Sabar-Kantha. Mesolithic [4.5] site.

IAR 1970-1.

Padaria, Dt Jabalpur. Middle (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) factory and camp site.

IAR 1964-5.

Padasalgi, Dt Bijapur. Lower and Middle Palaeolithic [4.2, 3] site.

IAR 1963-4. Pappu, R.S., 1974, *Pleistocene Studies in the Upper Krishna Basin*, Pune, p. 32.

Padda, Dt Gurdaspur. Early historical [4.18.1] remains. See ACHAL-SAHEB.

IAR 1961-2.

Padeknur, Dt Bijapur. Chalcolithic [4.14.8] site.

See ALMEL.

IAR 1959-60.

Padhardo, Dt Kutch. Historical site (of unspecified nature). See AJMEL.

IAR 1965-6.

Padinhattumuri, Dt Kozhikode. Megalithic [4.17.10] site with rock-cut caves yielding pottery.

Indian Antiquary, 8, 1879. Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Padra, Dt Kheda. Mesolithic [4.5] and Chalcolithic [4.14] site. Pottery comparable with that of RANGPUR II C and III and other antiquities such as sling balls, grinding stones, etc., were found.

IAR 1971-2. Momin, K.N., 1976, in *Arch. Congress & Seminar, 1972*, Kurukshetra.

Padrajpur, Dt Sagar. Series I and II (Lower and Middle Palaeolithic [4.2, 3]) tools were found in the bed of the Bina.

IAR 1960-1.

Padri Lalpur, Dt Kanpur. NBPW [11.16], Black-slipped Ware [11.13] and slipped red ware.

IAR 1967-8.

Padupariyaram-I, Dt Palghat. Megalithic [4.17.10] site with cist burials.

IAR 1969-70.

Padur, Dt Chingleput. Megalithic [4.17.9] site.

AI, 22, 1966, p. 30.

Pagadalapalli. See KANDLERU VALLEY.

Pagnesar, Dt Raisen. Lower Palaeolithic [4.2] tools from compact gravels on the bank of the Betwa.

IAR 1958-9.

Pahalgaon, **Pahlgaon**, Dt Anantanag. Early Stone Age (Lower Palaeolithic) tools of the chopper type [4.2] were found in the LIDDAR VALLEY in deposits assignable respectively to the Second Glacial and the Second

Paiyampalli

Interglacial.

IAR 1969-70; 1970-1; 1972-3.

Pahara, Dt Banda. Neolithic [4.6.3] celts and pounders were found.

IAR 1969-70.

Paharpur, Dt Santal Parganas. On the s. bank of the Gomai river were discovered Lower Palaeolithic [4.2] flake tools on quartzite, scrapers of Series II (Middle Palaeolithic [4.3]) on chert and quartzite and microliths, both geometric and non-geometric, on quartzite, crystal and chert.

IAR 1960-1.

Pahlgaon. See PAHALGAON.

Pahlwan, Dt Jind. The ceramic finds comprise SiSWAL, late Harappa [11.4] and OCW [11.5].

Suraj Bhan, & Shaffer, J.G., 1978, in *Man & Environment*, 2, p. 62.

Paigu, Dt Mainpuri. PGW [11.14] site.

IAR 1961-2.

Paikara, Dt Nilgiri. Megalithic [4.17.9] site.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras, p. 227.

Paima, Dt Gurgaon. PGW [11.14] and early historical [4.18.1] site.

Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.

Paind, Dt Sangrur. PGW [11.14] site.

Suraj Bhan, 1975, *Excavation at Mithal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 124.

Paisra, Dt Monghyr. Extensive Lower Palaeolithic [4.2] factory site yielding handaxes made in advanced Acheulian traditions, cleavers invariably made on flakes and side scrapers of various types.

Arch. Congress & Seminar, 1972, Kurukshetra, 1976.

Paithan (19°28'; 75°24'), Dt Aurangabad, on the Godavari at a distance of 56 km s. of Aurangabad, famous in ancient Indian literature as Pratiṣṭhāna, a town of consequence referred to in Jaina, Buddhist and Brāhmaṇical literatures. The Jaina literature especially and more so the *Brhat-Kalpasūtra-bhāṣya* associate it with the Sātavāhanas and the Nāgas and recent several stories emphasizing the association of both these with the ancient town. It is referred to in foreign accounts as well. The *Periplus* calls it Paethana and places it at 20 days' march s. of Barygaza (BHARUCH). The work further says that Paithan exported large quantities of onyx. Ptolemy refers to it as capital of king Pulumāvi of the Sātavāhana dynasty and places it in Ariake. Pratiṣṭhāna was connected with Madhyadeśa by land routes.

At present the area of ancient habitations has been partly disturbed and several mounds are under occupation. Hundreds of antiquities like coins, moulds, terracottas and pottery come up everyday in casual digging and river-bed clearance. This has resulted in the building up of several private collections. The ancient site spreads well over 4 sq km. Some areas are still called by legendary names, as for instance the Nāga-ghāt. There

is also another area which is supposed to contain the remains of the palace of king Sātavāhana, though no corroboration is as yet available. Some mounds rise as high as 18 m above the present water level of the Godavari.

Paithan has given several early punch-marked coins [3.1], coins of the Sātavāhanas and of Tiberius and Augustus, as well as Roman bullae [6.4] on the surface. During the Sātavāhana rule it was the capital town connected by trade routes to BHARUCH in the n.-w., Nanaghat in the w., and Tagarapura (TOR) in the s.-e. However after the fall of the Sātavāhanas it seems to have lost its importance. During the Chalukya-Raṣṭrakūṭa period it does not seem to have regained its place of honour. However during the Yādava period it seems to have developed as a sacred place. The famous saint of Maharashtra Ekanātha (16th century) took *saṁādhi* here.

In spite of its long history and apart from legends and myths associated with it, Paithan has not been systematically excavated on a large scale. In 1936-7 the Arch. Dept of Hyderabad under Yazdani excavated a few trenches which gave remains of brick structures, terracotta, beads and a few coins (Yazdani, 1936-7). The antiquities mostly belong to early and late Sātavāhana period. In 1965-6 M.G. Dikshit tapped the locality called Kushan which, according to him, gave Sātavāhana pottery; the horizon below it gave the Chalcolithic Jorwe Ware [11.11] and human burials (IAR 1965-6, p. 54). The report of the first excavation is not detailed and that of Dikshit not published.

The Prehistoric man lived in the environs of Paithan was established as early as 1863 when Wynne found an agate flake at Mungi near Paithan (Wynne, 1866, pp. 283-4). Around 1904 Beal is reported to have recovered the fossilized remains of the skull of wild elephant (*Elephas namadicus*), the tusk of which has a diameter of 74 cm. The sporadic work done during the last 100 years has given sufficient indication that Paithan and the area contiguous to it was the abode of man in the Lower Palaeolithic [4.2], Middle Palaeolithic [4.3], Chalcolithic [4.14.6], early historical [4.18.9] and medieval times. Well-planned large-scale explorations and excavations are necessary to fully expose the remains.

Oldham, T., 1868, in *Records of the Geological Survey of India*, 1, pp. 65-9. Pilgrim, G.E., 1905, *ibid.*, 32, pp. 199-218. Sankalia, H.D., 1942-3, in *Bull. Deccan College Res. Inst.*, 4. Wynne, A.B., 1866, in *Geological Magazine*, 3. Yazdani, G., 1936-7, in *AR Hyderabad Arch. Dept.* 1936-7.—S.B. DEO

Paiwa, Dt Ujjain. Historical site (of unspecified nature).

IAR 1971-2.

Paiyampalli, Dt N. Arcot, in Tiruppattur (12°30'; 78°36'), Taluka, the only excavated site in Tamil Nadu

which shows a clear overlap of the Neolithic [4.6.10] with the Megalithic [4.17.9] culture. The habitations are located on the three terraces of the Talattappamalai hills forming part of the Shevaroy Ranges. Megalithic burials are noticed at the foot of the hill in the U-shaped valley below.

Excavation in the habitation area by S.R. Rao of the ASI (IAR 1964-5, p. 22; 1967-8, p. 26) brought to light the two overlapping cultures, Neolithic and Megalithic, with two subdivisions in the former. Besides three cairn circles were also tackled.

The Neolithic pottery [11.1.5] of the earlier phase comprises the pale-grey, burnished grey and red wares, the last one in a very small quantity. In the subsequent phase red ware predominates, though the grey ware continues. Some burnished grey vessels bear paintings in red ochre on the rims. This painted ware appears and dies in this very phase itself. The upper levels of this phase represent the overlap phase yielding iron, Megalithic Black-and-red Ware [11.15] and other associated remains. The Neolithic pot forms include the lipped bowl, pot with flaring mouth, storage jar and dough plate, the last two being in red ware. The lipped bowl with round base is the most common shape occurring in all the wares.

The ceramics of the Megalithic culture consists of the Black-and-red Ware and all-black and red wares. Besides a coarse red ware painted in chocolate or light-brown exclusively on the outside in the habitation and in orange pigment in burials has also been noticed. The painted designs though elementary and 'without any proper scheme' include among others human and floral designs. In the late levels occurs the Russet-coated Painted Ware [11.22], the diagnostic ceramic of the early historical period. Nail and finger incisions, palm leaves, wavy lines, triangular notches, etc., form the incised, applied and stamped decorations.

During the early Neolithic phase, according to the excavator, the people lived in pit-dwellings [14.13] cut into the natural soil, oval, circular and oblong on plan, with their longer axes along the cardinal directions. One of the pits is divided into two parts by a row of stones. The larger ones have an approach ramp. One stone-lined pit shows two occupational phases, the earlier marked by a flat stone at the bottom and the later by a rammed-earth floor 50 cm thick. These dwellings had superstructures of perishable materials as evidenced by post-holes along the periphery. Considering the climatic and environmental conditions of the region the pits appear more to be storage bins or refuse pits rather than dwellings. In the later phase huts with floors levelled with stone chips and plastered with a mixture of mud and ash were the norm.

In the Megalithic levels the residences were circular,

oval and oblong or plan as deduced from the disposition of the post-holes, their superstructure again being of perishable materials with a central post resting on a perforated stone to support the roof. The circular houses measure 1.5 to 3 m in diameter, while the oblong ones vary from 1.7 to 4 m along the longer axes. The floors are of stone chips with a *murram* spread and are often plastered with lime. A rubble floor has been also noticed on the periphery in some cases. Rubble foundations for houses are also not unusual. The houses are normally single-roomed though double-roomed ones are also present. Terracotta lamps [6.11], as seen from the find of an eight-lipped circular one, illuminated the houses.

The tool repertoire of the early Neolithic occupation consists of bone and stone implements, the former being represented by awls, points and scrapers and the latter by axes with pointed and truncated butt-ends at all stages of manufacture. Axe-hammers, mace-heads and perforated stones predominate, besides a short blade industry on silicious stones which on the evidence of the abundance of waste flakes and fluted cores could be presumed to have been manufactured locally. In the later phase bone tools disappear and blade tools increase in frequency. Polished stone axes however continue. Stone objects of domestic utility are querns, mortars, pestles, pounders [6.19] and pebble polishers [16.2].

No metal is available in the Neolithic levels. In the Megalithic period iron is used profusely for making sickles, knives, spearheads, arrowheads, axes, nails, etc.

Objects of beautification were beads of terracotta in the Neolithic and beads of semiprecious stones including etched ones, shells, glass and terracotta, opaque glass bangles and ear ornaments in the Megalithic. That the Megalithic folk used gold ornaments as well is borne out by a mould of a goldsmith. Terracotta figurines of a long-horned variety of cattle in the Neolithic and birds and animals in the Megalithic represent toys.

The economy of both the Neolithic and Megalithic peoples appears mainly to be agricultural and cattle-rearing, supplemented by huntings, besides iron-working in the Megalithic period as seen by the profusion of iron slag [16.9.4]. Cereals and pulses—horsegram (*kulti*) and greengram—were cultivated [2]. For harvesting composite tools of short blades seem to have been utilized. The animals domesticated or hunted included the cattle, sheep, deer, pig, fowl, jungle cat and rhino.

It is not known how the dead were disposed in the Neolithic period. However the Megalithic burials consisted of stone circles [4.17], three of which have been excavated. The first cairn circle concealed an ovoid pit lined with stone slabs, where on the bed rock over a thin spread of greyish earth were interred disarticulated

bones of two individuals. The burial furnishing consists of the pots and pans and weapons of iron, etc.—the usual Megalith equipment. The other megalith, also a cairn circle, entombed in an oblong stone-lined pit a sarcophagus [12.9] having 24 legs and containing disarticulated fragmentary human bones. The main pot forms include the tulip-shaped vase, bowl, shallow dish in the Black-and-red Ware and funnel-shaped lid in all-black ware. Besides red-ware vessels are also available. Graffiti [20.1] are noticed on pottery both from the burials and habitations. Iron implements from the burials are arrowheads, spearheads, etc.

The Neolithic levels at Paiyampalli on ^{14}C determinations range in date between 1725 ± 110 B.C. and 1360 ± 210 B.C.; for the Megalithic period the dates are 640 ± 210 and 380 ± 105 and even a little later. The overlap between the Neolithic and the Megalithic must have taken place some time after 1360 ± 210 B.C. but before 640 ± 105 B.C.

—K.S. RAMACHANDRAN

Paj-Bangar, Dt Saharanpur. PGW [11.14] and associated wares.

IAR 1963-4.

Pajrana, Dt Saharanpur. OCW [11.5] and medieval wares.

IAR 1964-5.

Parkara-Buzurg, Dt Unnao. NBPW [11.16] site.

IAR 1964-5.

Pakari-Dubey, Dt Gorakhpur. Black-and-red ware (of unspecified nature) and NBPW [11.16].

IAR 1963-4.

Pakashma, Dt Rohtak. Early historical [4.18.1] site.

Jour. Haryana Studies, 3, 1, p. 65.

Pakhri, Dt Shahdol. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1964-5.

Pal, Dt Rajkot. Late Stone Age (Mesolithic [4.5]) and Harappa [4.9] site.

IAR 1964-5; 1965-6.

Palagiri, Dt Cuddapah. Megalithic [4.17.7] port-holed cists were found on the left bank of the Mogameruru Nadi.

AI, 4, 1947-8, p. 306.

Palaiyam, Dt Dharmapuri. Megalithic [4.17.9] site with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Palaiyamkottai, Dt Dharmapuri. Megalithic [4.17.9] site with dolmenoid cists and circle stones.

IAR 1967-8.

Palajayankondacholapuram, Dt Tiruchchirappalli. Megalithic Black-and-red Ware [11.15.3] and early historical site.

IAR 1962-3.

Palajor, Dt Purulia. Microliths (of unspecified nature).

IAR 1959-60.

Palamadai, Dt Tirunelveli. Megalithic [4.17.9] site.

ASI—AR 1902-3.

Palamcottah, Dt Tirunelveli. Megalithic [4.17.9] site.

ASI—AR 1902-3.

Palamtopu, Dt N. Arcot. Megalithic [4.17.9] site with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Palamukkal ($12^{\circ}12'$; $79^{\circ}44'$), Dt S. Arcot. Megalithic [4.17.9] site.

AI, 22, 1966, p. 33.

Palangunattam, **Palanganattam**, Dt Madurai. Urn burial site [4.17.9] without megalithic appendage.

IAR 1956-7; 1957-8.

Palankottai, Dt Tirunelveli. Prehistoric site (of unspecified nature).

Cammiade, L.A., *Gazetteer of Tinnevely Dt.* p. 409. ASI—AR, 1936-7.

Palanswa, Dt Kutch. Historical site (of unspecified nature). See AJMEL.

IAR 1965-6.

Palasbari, Dt Purulia. Microliths (of unspecified nature).

IAR 1959-60.

Palasi¹, Dt Dhule. Microliths associated with ochre-coloured pottery. See DHAMDAL

IAR 1957-8.

Palasi². See SIRSA VALLEY.

Palassena, Dt Palghat. Megalithic [4.17.10] site with dolmens and menhirs.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Palavakkam, Dt Chingleput. Megalithic [4.17.9] site.

AI, 22, 1966, p. 28.

Palavoy, Dt Anantapur. The site, 8 km s.-e. of Kalyandrug on the Kalyandrug-Dharmavaram road, consists of four ash-mounds [14.3] and a Neolithic [4.6.8] habitation. One of the ash-mounds yielded a sequence of three Pds, of which the lowest one was found to be pre-Neolithic marked by the occurrence of patinated trap flakes and microliths. Pd II, Neolithic, was represented by floors with post-holes. An interesting find was an edge-ground bone axe. Other objects included Neolithic stone implements, painted pottery and blotchy grey pottery, all handmade, besides a large number of unbaked clay objects, a large number of fragmentary animal bones some of which were charred. Pd III was post-Neolithic and showed the use of iron. In the habitation area four single urn burials covered with bowls were exposed. The ^{14}C date for the earliest level is 1965 ± 105 B.C. See AKKAMMAKONDA.

IAR 1966-7.

Palaya-gandharyakottai, Dt Thanjavur. Megalithic [4.17.9] site with three stone circles.

IAR 1955-6.

Paleyur, Dt Dharmapuri. Megalithic [4.17.9] site with

port-holed cists.

IAR 1967-8.

Pali¹, Dt Hissar. Pali-1 has plain grey ware and Pali-2 pre-Harappa [11.2], Harappa [1.3] and plain grey wares.

IAR 1966-7. *Haryana Studies in History & Culture*, p. 138. Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 124.

Pali², Dt Pali (wrongly stated to be Marwar). Site on the river Bandi with Series I and II (Lower and Middle Palaeolithic [4.2, 3]) tools.

IAR 1958-9.

Paliad, Dt Bhavnagar. Early historical site with Red Polished Ware [11.23].

IAR 1955-6.

Paliangalam, Dt N. Arcot. Lower Palaeolithic [4.2] site on the river Cooum.

Foote, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 172.

Paliaura, Dt. Jabalpur. Microliths (of unspecified nature).

IAR 1962-3.

Palipalaiyam, Dt Salem. Megalithic [4.17.9] site with menhirs, cromlechs and cairns.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Palkhed, Dt Nasik. Mesolithic [4.5] site.

IAR 1965-6.

Palladam Taluka, Dt Coimbatore. Cairn circles [4.17.9]. (Sites unspecified).

IAR 1958-9.

Pallahara, Dt Dhenkanal. Series I (Lower Palaeolithic [4.2]) tools.

IAR 1957-8.

Pallapalaiyam, Dt Coimbatore. Megalithic [4.17.9] site with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Pallasana, Dt Palghat. Megalithic [4.17.10] site with dolmens.

IAR 1969-70.

Pallathara-Pallipuram, Dt Alleppey. Ring-wells [14.15] resembling those connected with the Megalithic remains were discovered.

IAR 1970-1.

Pallavaer, Dt Palghat. Megalithic [4.17.10] cists and stone circles.

IAR 1960-1.

Pallavamedu, Dt Chingleput. Excavation at this site traditionally associated with the Pallavas revealed three Pds of occupation. Pd I was characterized by the occurrence of a red ware in varying shades, a terracotta human figurine and shell bangles. Pd II had two structural phases represented by a mud platform and floorings. Notable finds included potsherds with graffiti [20.1], red and black wares and beads of crystal and glass. Pd III produced glass beads, stucco pieces a tiny and pottery similar to that of the earlier period. The structural

remains consisted of a large dump extending to 20 m obviously representing the debris of a building of the end of the Pallava rule in c. 9th century.

IAR 1953-4; 1970-1.

Pallavaneswaram, Dt Thanjavur. Early historical [4.18.12] site.

IAR 1961-2; 1963-4.

Pallavaram (12°55'; 80°11'), Dt Chingleput, where a palaeolith was found by Foote for the first time in India in 1863. In 1847, Boucher de Perthes first made what then was considered as a daring claim of having found flint tools of human fabrication in the old terrace deposits of the river Somme at Abbeville, in association with long extinct fauna. In 1859 the year when Darwin published his *Origin of Species*, three eminent English geologists—Prestwich, Evans and Falconer—confirmed the claim of Boucher de Perthes unqualifiedly before the Royal Society and in 1863 Lyell published his *Geological Evidence of the Antiquity of Man*.

It is indeed creditable that shortly afterwards Foote of the Geological Survey of India while looking out for similar traces of human artefacts in s. India was rewarded in 1863 for his labours by the find at Pallavaram near Madras of a true Palaeolithic [4.2] among the debris of a pit in the laterite gravel 60 to 91 cm thick overlying the granitic gneiss. This was indeed soon to be followed by his other systematic discovery and in greater numbers of Stone Age tools in the gravel beds of the Korttalayar valley in the company of his colleagues, William King and many others. The discoveries and collections by Foote from all over India were published in 1914 and 1916 in the form of a catalogue; and notes on sites; he also made over his entire collection to Madras Government Museum.

The Pallavaram tool is a genuine chipped implement found in a ballast pit of laterite gravel in the Brigade Parade Ground lying to the w. of the National Highway here. In January 1864 Foote revisited the Pallavaram pit and found two more palaeoliths of typical oval shapes in the material exposed by the enlargement of the pit.

Pallavaram is also notable for Megalithic monuments [4.17.9] which had been located in the form of terracotta sarcophagi [12.9], seemingly without any cist or enclosures, like the urn burials, round about Trisulam, thus marking an exclusive burial mode.

Foote, R.B., 1914, 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, 2, pp. 109-11. Rea, A., 1887, *G.O. No. 1175*, published on 12 August 1887, p. 6.—K.V. SOUNDARA RAJAN

Pallikonda, Pallikondai, Dt N. Arcot. Megalithic [4.18.9] site. See PULICONDAH.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras, p. 169.

Pallipoliem, Dt Coimbatore. Megalithic [4.18.9] site.

Madras Jour. of Literature & Science, 24, 1878, pp. 150-68.

Pallur, Dt Chingleput. Megalithic [4.17.9] site.

Panditon ka Tila

AI, 22, 1966, p. 88.

Pal-Neodhia, Dt Allahabad. Early historical [4.18.1] site.

IAI 1962-3.

Palni-Alinagar, Dt Bijnor. PGW [11.14] site.

IAI 1959-60.

Palni hills, Dt Madura. Megalithic [4.17.9] site with dolmens.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Palsa, Dt Parbhani. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAI 1970-1.

Palsoda, Dt Ujjain. Historical site (of unspecified nature).

IAI 1971-2.

Palth, Dt Kathua. Early Stone Age (Lower Palaeolithic [4.2]) tools were collected from the terrace of the river Basantar. Two mace-heads and a gritty red ware were also found.

IAI 1968-9.

Palwal (28°8'; 77°19'), Dt Gurgaon. PGW [11.14] site.

AI, 10 & 11, 1954 & 1955, p. 140.

Palwe-Khurd, Dt Ahmadnagar. Microliths possibly of Chalcolithic [4.14.6] association and early historical pottery.

IAI 1960-1.

Palya, Dt Mysore. Neolithic [4.6.9] remains and burnished brown, red and black-and-red wares.

IAI 1960-1.

Pama, Dt Fatehpur (wrongly stated to be Fatehgarh). NBPW [11.16] was found about 1½ km to the n.-e. of Ghazipur.

IAI 1957-8.

Pambadumpara, Dt Kottayam. Megalithic [4.17.10] urn burial site.

IAI 1965-6.

Pambarwan, Dt Jammu. Late historical pottery and Gupta terracottas.

IAI 1962-3.

Pampur, Dt Anantanag. Neolithic [4.6.1] assemblage and menhirs [4.17.1] similar to those found at BURZAHOM.

IAI 1962-3.

Panagarh, Dt Burdwan. Chalcolithic [4.14.4] black-and-red ware and associated red ware were found on the eroded surface of Siuliburirdanga a few km to the n. of the Damodar.

IAI 1971-2.

Panaiyampalli, Dt Coimbatore. Megalithic [4.17.9] cairn circles.

IAI 1961-2.

Panaiyur, Dt Tirunelveli. Burial urns [4.17.9].

Cammiade, L.A., *Gazetteer of Tinnevely Dt*, p. 409. ASI—AR 1936-7.

Panappalaiyam, **Panappalaiyam**, Dt Coimbatore. Megalithic [4.17.9] sites with dolmens. (Same as follow-

ing?).

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras, p. 217.

Panapalli, Dt Coimbatore. Megalithic [4.17.9] cairn circles. (Same as preceding?).

IAI 1962-3.

Panari, Dt Jhansi. Microlithic (of unspecified nature) site.

IAI 1963-4.

Panasa, Dt Allahabad. Bowl and dish fragments of grey ware with paintings and red ware similar to those obtained from the earlier levels of KAUSAMBI.

IAI 1961-2.

Panchamauli Pada, Dt Dhule. Late Stone Age (Mesolithic [4.5]) site.

IAI 1966-7.

Panchmukhi, Dt Mirzapur. Rock-shelter with paintings [13].

Misra, V.D., 1971, *Some Aspects of Indian Arch.*, Allahabad, p. 55.

Panchoha, Dt Allahabad. Chalcolithic [4.14.2] site on the right bank of the BELAN near Deoghat bridge yielding microliths, including crested-ridged flakes, Neolithic celts and sherds of coarse red and black-and-red wares.

IAI 1970-1.

Panchpedia, See CHANDRAPRABHA VALLEY.

Panchpheri, Dt Mirzapur. Upper Palaeolithic [4.4] site yielding blades, points, scrapers and burins.

IAI 1970-1.

Panchwada, Dt Panch Mahals. Mesolithic [4.5] site.

IAI 1970-1.

Panchwaniya, Dt Varanasi. Black-and-red ware (of unspecified nature).

IAI 1962-3.

Pandavapura. See FRENCH ROCKS.

Pander, Dt Bhilwara. Non-megalithic black-and-red ware of AHAR² affinity [11.6.2?]

IAI 1958-9.

Pandharpur, Dt Solapur. In the bed of the Bhima were found Lower Palaeolithic [4.2] handaxes in the gravel conglomerate and unstratified microliths (of unspecified nature). In addition a small-scale excavation revealed three late historical and medieval [4.19.7] phases of occupation. Phase I was marked by the presence of a black-grey ware bearing stamped designs in the form of small figures on the tip portions of *hāṇḍī*-like vessels and bowls. Phase II yielded coins and associated pottery of the Indo-Islamic period. Phase III showed structural remains consisting of a complex of massive stone walls, from the foundations of which coins belonging to the early Maratha period, corresponding to the latter half of the 17th century, were recovered.

IAI 1956-7; 1967-8.

Pandhrol, Dt Kutch. Historical site. See AJMEL.

IAI 1965-6.

Panditon ka Tila, Dt Kurukshetra. Late Harappa [11.4] ware, PGW [11.14] and early historical [4.18.1] ware.

Kurukshetra Univ. Res. Jour. (Art and Humanities), 10, 1976, pp. 28-9.

Pandiyampalaiyam, Dt Coimbatore. Megalithic [4.17.9] cairn circles.

IAR 1961-2.

Pandoli, Dt Kheda. Early historical [4.18.2] site.

IAR 1971-2.

Pandrethan (34°3'; 74°51'), Dt Srinagar, 5 km s.-e. of Srinagar, the ancient capital of Kashmir, Purānādhish-thāna. There are two dilapidated Buddhist stūpas, one of them with a base of three angular offsets and four re-entrant angles.

Kak, R. C., 1933, *Ancient Monuments of Kashmir*, London, p. 112.
Mittra, D., 1971, *Buddhist Monuments*, Calcutta, p. 110.

Pandu, Dt Ranchi. So-called Asura site [14.4].

Roy, S. C., 1915, in *Jour. Bihar & Orissa Res. Soc.*, 1, pp. 241-2, 1916, in *ibid.*, 2, p. 72.

Pandupara, Dt Trichur. Megalithic [4.17.10] cists.

IAR 1963-4.

Pandu Rajar Dhibi (23°35'; 87°39'), Dt Burdwan, situated in village Panduk in the flood-plains of the Ajay amidst the typical rural surroundings of Rādhā on a red lateritic [9.6] undulating plain, the mounds locally known as Rajar Dhibi or Raja Pota Danga and associated with legendary king Pāṇḍu. In 1914 a gold coin of Narasimhagupta Bālāditya was picked up at the site; a few medieval sculptures found here are locally worshipped. In 1961 a few microliths [4.14.4], sherds of the black-and-red ware [11.6.5] and shiny black-painted red ware sherds were collected from the site by the writer and S. C. Mukherjee, both of the Directorate of Arch., W. Bengal (AIR 1960-1, p. 67). Large-scale excavation was undertaken here by the Directorate under P. C. Das Gupta during 1962-5 (IAR 1962-3, p. 43; 1963-4, p. 61; 1964-5, p. 48), revealing a cultural assemblage of four distinct Pds, Pds I and II Chalcolithic [4.14.4], Pd III of the Iron Age [4.16] with an overlap with the preceding Pd, and Pd IV early historical [4.18.5] and medieval.

In Pd I the site seems to have been occupied by a people who lived in the huts erected over the natural lateritic soil and used handmade drab or thick grey ware showing impressions of husks of cultivated paddy [2.2] identified as *Oryza sativa* L. (Graminae). They also produced a wheel-turned thin plain ware of sandy fabric, a pale-red ware decorated with hatched cord designs and coarse (now rolled) black-and-red ware bowls and vases. A single bone point and very few stone tools represent the other cultural equipments of the Pd. The people generally buried their dead within the habitation area primarily in an extended fashion having an e.-w. orientation, but a secondary fractional burial and fragmentary remains (only one molar) preserved in a pale-red urn show the other burial practices. The end of the Pd came in the wake of a devastating flood in the Ajay as seen by the accumulation of a thick layer of sandy silt just overly-

ing the occupational layer of the Pd.

The people of Pd II who arrived on the scene after the flood lived in rectangular-to-square or round mud huts framed with thick wooden or bamboo posts and walls made of wattle and daub. Floors of these huts were made of either *murram* sometimes mixed with terracotta nodules or clay mixed with cow-dung and were plastered with lime to prevent dampness. Ovens were used for domestic cooking. The dietary habits of these people can be ascertained from objects like charred rice and impressions of paddy husks on the pottery. Remains of the animal bones identified as nilgai, domesticated pig (*Sus scrofa cristatus* Wagner), humped bull (*Bos indicus* Linn.) and antlers of sambar (*Cervus unicolor* Kerr) indicate the domestication of some such animals and the utilization of others as food. Antlers were also utilized for fashioning bone tools such as arrowheads and awls.

Pd II presents a flourishing stage of occupation of the site and the efflorescence of its culture by the introduction of various ceramic industries mostly turned on the wheel. They are shiny red ware and black-and-red ware, the painted motifs being mostly geometric designs like dots and dashes, chevrons, sigma, criss-cross, solid triangles, wavy bands ladder, etc. The main types are: the bowl; shallow bowl; basin; channel-spouted bowl or basin in black-and-red ware with paintings in white or cream; tulip-shaped vase, often perforated at the bottom; deep bowl with a flaring rim in black-and-red ware; dish-on-stand with short stem in black-slipped ware; bowl-on-stand in red ware, sometimes painted; perforated vase or bowl; thick storage jar; *lotā*; long-necked jar with a flaring rim; funnel-shaped narrow-mouthed vessel; lid; and dish. Some sophisticated forms like the bowl, dish-on-stand, channel-spouted bowl and perforated vase perhaps indicate their ritualistic use.

Among other minor antiquities mention may be made of a few short microlithic tools, sometimes with crested medial ridge, as also point-cum-scrappers and flakes, copper objects like nail-parers, fish-hooks [6.6], antimony rods [18.1], heavy spiralled and ordinary bangles, rings, a tubular bead and bone objects like awls, points, harpoons and arrowheads as also beads of semiprecious stones, sometimes etched in white designs.

The people of this Pd practised the custom of burying the dead in three different modes, viz. primary (extended) burial, secondary (fractional) burial and urn burial. Five skeletal remains have been unearthed in an extended position with an e.-w. orientation. An interesting secondary burial reveals a burial arrangement where the skull has been found placed vertically on the grave pit with the face turned towards the w. The hip bones are placed symmetrically so as to encircle the skull perhaps for its protection, while the long bones of both the extremities are placed along the sides of the skull. Two

burials preserved in urns of pale-red ware and covered by hemispherical bowls of black-and-red ware as lids placed invertedly have been noticed. Sometimes perforated vases or pots of red ware and beads of copper and semiprecious stones have been found associated with the burials. The skeletal remains have been studied in detail their reports have since been published (Gupta *et al.*, 1977). The different burial customs have a striking resemblance with the burial practice narrated in the later Vedic literature (Chakravarty, 1968).

The ^{14}C date of an excavated charcoal sample from the cemetery level of Pd II is 1012 ± 120 B.C. (half-life value not stated). Confirmation about this date is available at MAHISDAL.

Most of the pottery types of Pd II are continued in Pd III, but they undergo slight variations in respect of the shape and treatment of the surface. Although the painted and plain red ware and painted and plain black-and-red ware persist, they are outnumbered by plain and painted black-slipped ware [11.13], in which are produced the vase, dish-on-stand, bowl, bowl-on-stand, *loṭā*, dish and lid, sometimes painted in white or cream in the style of the black-and-red ware. The slip on the red ware is applied in various shades of red varying from scarlet and pink to dark-brown and chocolate besides orange, creamish and tan turned due to firing under different conditions. The channel-spouted bowl in black-and-red ware the spouted ends of which were smaller, narrower and rather elongated in Pd II are now turned out in elegant shapes; the spouted ends have splayed ends, while red ochre is applied after firing. Small high-necked vases like the *loṭā* with a flaring rim are produced in both red-slipped and black-slipped ware. In this Pd was also introduced a kind of black burnished ware having incised decorative designs or stylized motifs indicating a peahen holding a snake, a row of fish with a hatched decoration, *pipal* leaves, bull, undulated signs representing ripples of water as also hatched triangles and scallops. Black-slipped ware having incised and pin-hole decorations recalls the similar pottery from CHIRAND and TEKKALAKOTA. Polished or ground stone celts are found for the first time in this Pd. The main type of axes is of a tiny celt rounded-butt type with thin lenticular section, typical of the e. Neolithic clets [14.6.6], perhaps used after having been hafted in sleeves of wood, bone or horn. They perhaps produce evidence of re-use of an earlier material by some backward communities still living in the Neolithic stage of life and do not appear to be an integral part of the main culture stream of the people of the site.

Other minor antiquities of this Pd are a unique leaf-shaped arrowhead without any mid-rib in copper, bangles, rings and trinkets of copper, bone pikes and bone arrowheads with tangs, microlithic tools like parallel-

sided blades, flakes and fluted cores, beads of semiprecious stones, terracotta figurines of mother-goddess and figurines with pinched head and pin-hole decorations as also gold pellets and pins.

Among the noteworthy structural features of this Pd mention may be made of a row of six elliptical ovens flanked by a thick layer of ash containing a broken sword blade of iron and iron slag [16.9.4] which may perhaps be treated as evidence of iron-smelting at the site. Huge accumulations of ash and charcoal with occasional patches of red burnt earth observed in almost all the trenches, as also charred rice associated with these iron tools are weapons, attest to the advent of the iron-using newcomers.

Pd IV which followed after a lapse of time indicates two principal phases, the earlier of which is related to the early historical period and the other to the medieval. The cultural assemblage of Pd IV A is represented by the bowl, cup and the so-called 'ink-pot' type [20.2] vase of a decadent red ware, a few sherds of the NBPW [11.16], lipped bowl of black ware, stamped pottery, copper ornaments, stone and terracotta beads, polished stone celts, saddle-querns [6.19], stone pestles [6.19], goldsmith's moulds and a disc-like gold bead. The people lived in brick-built houses, the floors of which were paved with bricks. A gold coin of Kaniska I recovered from the surface is an important antiquity of this Pd. The cultural repertoire of Pd IV B is related to the post-Gupta period and includes ordinary conical cups, terracotta net-sinkers [6.16] and wares of medieval times like the spouted goblet or jug.

Chakrabarti, D.K., 1968, in *Proc. Ind. Hist. Congress* 1967, Patiala, 1, pp. 48-59. Das Gupta, P.C., 1964, *Excavations at Pandu Rajar Dhibi*, Calcutta. Gupta, P., & Pal, A., 1977, in *Bull. Anthropological Survey of India*, 19, 3-4, 1970, pp. 127-294. Mukherjee, S.C., 1966 in Das Gupta, P.C., ed., *Exploring Bengal's Past*; 1967, in *Indian Museum Bull.*, 2, 2.—D.K. CHAKRABARTI

Pandusar, Dt Ganganagar. Mound yielding historical pottery and copper coins.

IAI 1972-3.

Pangura, Dt Ranchi. A Neolithic [4.6.5] polished chisel of dark-green gneiss was found.

S.C. Roy, 1916, in *Jour. Bihar & Orissa Res. Soc.*, 2, p. 69.

Panguru (13°46'; 79°36'), Dt Chittoor. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAI 1967-8.

Panhali Pada, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAI 1964-5.

Panhan, Dt Unnao. NBPW [11.16] site.

IAI 1964-5.

Panihar, Dt Gwalior. On the fringes of the forest on the Agra-Bombay highway a collection of palaeoliths included two chopper-chopping tools, Acheulian hand-axes, scrapers, ovates and cleavers [4.2].

IAI 1968-9.

Panihari (29°38'; 75°8'), Dt Hissar. Rang Mahal [11.24] site.

IAI 1967-8.

Panipat (29°24'; 76°58'), Dt Karnal. PGW [11.24] lay immediately over the natural soil and NBPW [11.16] was found higher up in the mound.

AI, 10 & 11, 1954 & 1955, pp. 141, 145.

Panjanahalli, Dt Mysore. Black-and-red Ware [11.5] and Russet-coated Painted Ware [11.22].

IAI 1961-2.

Panjasaran (32°13'; 75°54'), Dt Kangra. Cleavers, choppers, discoids, a few scrapers, flakes and cores were obtained in mint condition from the clay. See BEAS-BANGANGA VALLEY

IAI 1966-7.

Panjra, Dt Bhandara. Series II (Middle Palaeolithic [4.3]) tools.

IAI 1959-60.

Pankhan, Dt Junagadh. Historical site (of unspecified nature).

IAI 1972-3.

Pannapura, Dt Raichur. Chalcolithic [4.14.8] site.

Karnataka Bharati, 6, 1, pp. 64-75.

Pannivaykara, Dt Kottayam. Megalithic [4.17.10] urn burial site.

IAI 1965-6.

Panniyannur, Dt Cannanore. Rock-cut caves, possibly Megalithic [4.17.10].

IAI 1960-1.

Panniyannur Amsom, Dt Kozhikode. The deposits in the Megalithic [4.17.10] rock-cut cave were found to be badly disturbed but broken iron implements, parts of a tripod and a round-based Black-and-red Ware [11.15.3] jar were found in the vicinity.

IAI 1959-60.

Panod, Dt Indore. Black-and-red ware (of unspecified nature).

IAI 1958-9.

Panr, Dt Samastipur. A few sherds of NBPW [11.16], black ware and a cast copper coin [3.1] were collected from the site of Pandavasthana n.-w. of Dalsingsarai.

IAI 1972-3.

Pansina (22°30'; 71°55'), Dt Surendranagar. Late Harappa [4.10] site located on the dried-up bed of the Bhadar river, assignable to Pd II B of RANGPUR.

AI, 18 & 19, 1962 & 1963, p. 206.

Pantanda. Dt Birbhum. Black-and-red ware (of unspecified nature).

IAI 1965-6.

Panunda, Dt Cannanore. Megalithic [4.17.10] site with rock-cut cave having recessed entrance.

Raghavan, M.D., 1936, in *Dr Krishnaswami Aiyangar Commemoration Vol.*, Madras, pp. 384-9.

Panur, Dt N. Arcot. Lower Palaeolithic [4.2] site.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 4.

Panwala Khera, Dt Gurgaon. Early historical [4.18.1]

site.

Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.

Panyam, Dt Kurnool. Lithic tools (of unspecified nature) and megaliths [4.17.7] were found close together near the cement factory. See BILLA SURGAM.

IAI 1959-60.

Panzgom, Dt Anantanag. Neolithic [4.6.1] assemblage similar to that of BURZAHOM.

IAI 1962-3.

Paoli, Dt Jind. Pre-Harappa [4.8] site comparable with Early SISWAL. See YAMUNA RIVER.

Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 125.

Paota, Dt Udaipur. Microliths (of unspecified nature) in the Karanpur-ki-nadi valley.

IAI 1962-3.

Papamiya-Tekdi, Dt Chanda, situated on the Jharpat, 5 km n.-e. of Chanda town. Bifacial pebble choppers and Abbevillio-Acheulian handaxes and cleavers [4.2] were picked up from the gravel beds of the river. From the uppermost gravel were collected scrapers, borers and diminutive axes, ascribable to an early stage of Series II (Middle Palaeolithic [4.3]). From the surface of the same gravel came blades, scrapers, burins, awls, etc., representing a blade-and-burin industry. Latest in the series, the microlithic industry included parallel-sided blades, backed blades, points, lunates, crescents and fluted cores (perhaps of Chalcolithic [4.14.6] association).

IAI 1960-1.

Papaurdhi, Dt Deoria. NBPW [11.16] site.

IAI 1962-3.

Papini, Dt Coimbatore. Megalithic [4.17.9] site with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Papra, Dt Gurgaon. Pre-Harappa [4.8] site.

Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 126.

Papreki, Dt Saharanpur. OCW [11.5] site.

IAI 1967-8.

Paradarami, Dt Chittoor. Megalithic [4.17.7] port-holed cists.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Paradpur, Dt Chanda. Lower Palaeolithic [4.2] site.

IAI 1960-1.

Parambur, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 1, 1, pp. 515-8.

Pampura, Dt Mysore. Megalithic [4.17.8] cairn circles.

IAI 1962-3.

Parandahalli, Dt Kolar. Megalithic [4.17.8] site, (Same as following?).

IAI 1971-2.

Parandapalli, Dt Kolar. Megalithic stone circles (Same as preceding?).

IAI 1972-3.

Parandur, Dt Chingleput. Early (Lower Palaeolithic [4.2]) and Late Stone Age (Mesolithic [4.5]) site.

IAR 1964-5.

Parang, Dt Dhenkanal. Series I (Lower Palaeolithic [4.2]) tools.

IAR 1957-8.

Parapatti, Dt Madurai. Megalithic [4.17.9] urn burials.

IAR 1958-9.

Pararia, Dt Jabalpur. Microliths (of unspecified nature).

IAR 1962-3.

Parasnath, Dt Bankura. Tools of Series II (Middle Palaeolithic [4.3]) and historical remains.

IAR 1959-60.

Paraspatar, Dt Chanda. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3]) tools and microliths (of unspecified nature).

IAR 1963-4.

Paraspora (34°8'; 74°38'), Dt Baramulla, ancient Parihasapura, a Buddhist site with a cellular quadrangle facing a rectangular courtyard. The cells are fronted by an open veranda. It has also a Buddhist temple—a square chamber built upon a square base and enclosed by a plain wall. The portico is covered by a massive trefoil arch. The original *stupa*, a simple rectangular structure, was later on elaborated into a square with one or more offsets on each side projecting far into the courtyard.

Kak, R.C., 1933, *Ancient Monuments of Kashmir*, London, pp. 52-3, Mitra, D., 1971, *Buddhist Monuments*, Calcutta, pp. 112-13.

Paraujervali, Dt Coimbatore. Megalithic [4.17.9] site with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Paraunda, Dt Jhansi. Site with palaeolithic and microliths (both of unspecified nature).

IAR 1963-4.

Paravai, Dt Madurai. Urn Burial [4.17.9] site without megalithic appendage.

IAR 1956-7; 1957-8.

Paravakkalipalaiyam, Dt Coimbatore. Megalithic [4.17.9] site with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Pardi, Dt Chanda. Tools of the Early and Middle Stone (Lower and Middle Palaeolithic [4.2, 3] Ages, and microliths (of unspecified nature) were picked on the banks of the Wardha.

IAR 1962-3.

Pardf, Dt Wardha. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1962-3.

Paremdara, Dt Bharatpur. PGW [11.14] site.

IAR 1970-1.

Parendapalli, Dt Kolar. Megalithic [4.17.8] port-holed cists.

AI, 4, 1946-7, p. 307.

Parerkola, Dt Santal Parganas. Tools of Series II (Middle Palaeolithic [4.3]) were collected from the bed of the Sankhorgara.

IAR 1960-1.

Parewala, Dt Rajkot. Harappa [11.3] Ware.

IAR 1957-8.

Pargaon, Dt Dhule. Chalcolithic [4.14.6] site with black-painted red and burnished grey wares.

IAR 1962-3.

Parham, Dt Mainpuri. PGW [11.14] and NBPW [11.16] site.

IAR 1961-2.

Pariakoli, Dt Mayurbhanj. See KULIANA.

Pariar, Dt Mainpuri. PGW [11.14] and NBPW [11.16] site.

IAR 1961-2; 1962-3.

Pariar, Dt Unnao. Copper Hoard comprising a flat celt, a shouldered celt and several harpoons [4.11].

Indian Antiquary, 36, 1907, p. 53.

Parichhatgarh, Dt Meerut. PGW [11.14], grey ware associated with NBPW [11.6], red ware of Sunga-Kushan assemblage and medieval ware.

IAR 1962-3.

Parihati, Dt Midnapur. Five double-axes, a bar-celt and a ring-like object of copper [4.11].

Purātattva, 9, 1979.

Parisar, Dt Birbhum. Neolithic [4.6.5.] site.

IAR 1971-2.

Parita-ka-Kot, Dt Ghazipur. Black-and-red ware (of unspecified nature).

IAR 1963-4.

Paritala, Dt Krishna. Rouletted Ware [11.21].

IAR 1961-2.

Pariyaram, Dt Trichur. Megalithic [4.17.10] site.

IAR 1966-7.

Parjan, Dt Kutch. Rang Mahal Ware [11.24].

AI, 18 & 19, 1962, & 1963, p. 206.

Parliakalan, Dt Ujjain. Chalcolithic [4.14.5] site.

IAR 1971-2.

Parlia Khurd, Dt Ujjain. Early historical [4.18.7] site.

IAR 1971-2.

Parmar-Kheri. See CHAMBAL VALLEY.

Parnundam, Dt Malappuram. Megalithic [4.17.10] site with umbrella stones.

IAR 1970-1.

Parodi, Dt Bharuch. Microliths (of unspecified nature) were picked up on the bank of a rivulet.

IAR 1970-1.

Parraon, Dt Jaunpur. NBPW [11.16] site.

IAR 1970-1.

Parsel, Dt Jabalpur. Microliths (of unspecified nature).

IAR 1962-3.

Pasalai, Dt Madurai. Megalithic [4.17.9] site with sepulchral urns.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Pasegam (21°52'; 71°38'), Dt Bhavnagar. Harappa

[4.9] and post-Harappa material, the latter corresponding to RANGPUR II C.

AI, 18 & 19, 1962 & 1963, p. 206. *IAR* 1960-1.

Pasewa, Pseva, Dt Mandsaur. Excavation brought to light a network of brick walls and vast quantity of pottery, the quantity of painted ware being small. See CHAMBAL VALLEY.

IAR 1957-8.

Paspalla, Dt Kurnool. Neolithic [4.6.8] pottery and other objects.

Footo, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Pasur, Dt Coimbatore. Megalithic [4.17.9] cists.

IAR 1960-1.

Patadungri, Dt Panch Mahals. Microlithic (of unspecified nature) site.

Sonawane, V.H., 1976, in *Arch. Congress & Seminar*, 1972, Kurukshetra.

Patajan, Dt E. Nimar. Tools of Series I (Lower Palaeolithic [4.2] and microlithic (of unspecified nature)).

IAR 1960-1.

Patal, Dt Bharuch. Middle (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) sites.

IAR 1969-70.

Patala, Dt Wardha. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1959-60.

Pataliputra (25°37'; 85°10'), Patna, the capital of Bihar, alternatively known as Kusumapura, Puspapura and Kusuma-dhvaja, on the s. bank of the Ganga, where the Gandak and Punpun join the mainstream respectively from the n. and s. There is also evidence that the Son which now meets the Ganga a few km up Patna originally ran for a certain distance parallel to the Ganga to its s. before discharging itself into the latter. Pataliputra was thus situated on the strip of land between the Ganga and the Son, explaining its abnormal length: breadth ratio mentioned by Megasthenes (below). Being on the confluence of so many streams it was an important political and commercial centre but was also exposed to floods as Patna is even now. Steep sections with cultural debris seen on the bank of the Ganga in the old city of Patna indicate that parts of the ancient city have been washed away by floods. And what survives is now mostly buried below the modern city, particularly e. Patna.

At the time of Buddha the place was only a village which was fortified by Ajātasatru, the ruler of Magadha (s. Bihar) in the first half of the 5th century B.C. His son Udayin transferred his capital to this place from Rājagṛha (RAJGIR), and since then it remained for centuries the capital of Magadha: under the Nandas and Mauryas became the virtual capital of India. The grammarian Pāṇini is said to have lived in the court of the Nandas. The city never lost its importance till the 6th

century A.D. At the time of Candragupta Maurya (last quarter of the 4th century B.C.) its prosperity knew no bounds. The royal palace, i.e., that of Candragupta, says Aelian, probably following Megasthenes, the Greek ambassador to the court of Chandragupta, could be vied by 'neither Memnonian Susa with all its costly splendour, or Ekbatana with all its munificence' (McCrinkle, 1901, p. 41). Palibothra, as Pataliputra was known to the Greeks, is described by Strabo and Arrian, again quoting Megasthenes, as situated at the confluence of the Ganga and Erannaboas (Hiranyabāha = Son); it was about 14.5 km in length and 2.4 km in breadth shaped like a parallelogram and was girded by a wooden wall with 570 towers and 64 gates and with loop-holes for the discharge of arrows, and a ditch about 182 m in breadth and 14 m in depth (McCrinkle, 1877, pp. 66, 205). Aśoka held the third Buddhist council here. The stone palace of Aśoka excited the marvel of Fa-Hien, the Chinese traveller, in the 5th century (Legge, 1886, p. 77). He also saw many Buddhist establishments. Under the Pālas the district of Pataliputra was known as Śrinagara-bhukti. The city was re-occupied in medieval times, notably under Sher Shāh who built a fort here in 1541, and has retained its provincial importance ever since.

Apart from the early 19th-century work of Buchanan and Rennel, A. Cunningham and J.D. Beglar made several attempts to locate the sites of Pataliputra as seen by Fa-Hien of the 5th and Hiun Tsang of the 7th century but without much success (*ASI-AR*, 8, 11 and 15). It was even concluded that Pataliputra had been washed away by the river. During 1892 to 1899 L.A. Waddell carried out excavations at several places in Patna (Waddell, 1892, 1903) and brought to light remains of wooden beams arranged in a double row and wooden drains. A colossal capital in the Hellenistic style was also discovered. In 1897-8 P.C. Mukherji came across a ditch extending e.-w. to 76 m and found punch-marked coins [3.1], coins of Candragupta II and fragments of polished pillars (Mukherji, 1898).

In 1912 and the following years D.B. Spooner of the ASI re-excavated Kumrahar (*ASI-AR* 1912-3, p. 53; *Progress Rep. ASI E. Circle*, 1912-3, p. 15; 1913-4, p. 45; 1914-5, p. 45; 1915-6, p. 27) and found all over the main site ruined brick walls which he ascribed to the Gupta period or the 8th century. Below was a layer of charcoal and ashes, about 30 cm thick, strewn amongst which were innumerable fragments of polished sandstone pillars occurring at a distance of 4.57 m (15 ft) from each other. As at least eight rows with ten heaps in each of such fragments were found he surmised that there had existed here a Mauryan pillared hall resting on 80 or more pillars which in turn had been placed on a wooden support. The belt of ashes, according to him,

indicated that before the date of the later brick structures the wooden superstructure of the building had been destroyed by fire which was also responsible for the rending asunder of the exposed parts of the pillars. The main problem of interest to Spooner was the 80 or more pillars and what had happened to them. He concluded that with the decay of the wooden platforms on which they had rested the pillars sank deep into the soft soil. As the pillared hall could not be compared with any other structure of India Spooner turned to Persia for analogies and found its prototype in the Achaeminid hall of Persepolis. With the inconclusive evidence of the excavation he tried to establish an exact parallelism between the architecture of Pataliputra and Persepolis and to explain whatever he had found in that light, postulating a Zoroastrian period of Indian history (Spooner, 1915).

Bulandibagh, already tapped by Spooner, was re-excavated in 1926-7 by J.A. Page and M. Ghosh (*ASI-AR* 1926-7, p. 135), resulting in the discovery of an e.-w. wooden structure running as excavated for a distance of about 137 m. It is a wall made of heavy wooden sleepers placed vertically in a double row, with similar sleepers joining them horizontally at the bottom and is thought to be a part of the wooden palisade seen by Megasthenes. In 1935 a similar structure was found at Gosainkhanda, 800 m to the e. of Bulandibagh but in a reversed fashion, viz. vertical sleepers capped by horizontal ones (*ASI-AR* 1935-6, p. 54). Remnants of the wooden structure have been found to have extended to other localities of Patna, though no coherent plan is available.

Spooner's finds from Kumrahar and Bulandibagh consist of punch-marked coins, terracotta figurines including the head of a smiling boy and a dancing girl, stone and glass beads, finished and unfinished seals including a glass seal with a Mauryan inscription and a spoked cart-wheel of wood [16.19].

Various schemes of sewerage in Patna in the 1920s resulted in the discovery of an enormous number of terracotta figurines and beads and large quantities of pottery, not properly studied. Unsystematically dug up and utterly unrecorded, the proceeds, now in the Patna Museum, consist of an undifferentiated mass, intrinsically very valuable but of little chronological significance. The terracottas have been relegated on stylistic grounds to the Maurya, Śunga Kushan and rarely Gupta periods (Gupta, 1965) and prove in bulk the great sub-soil potentiality of Patna.

Renewed excavation was undertaken at Kumrahar by the K.P. Jayaswal Res. Inst. from 1951 to 1955 (Altekar and Mishra, 1959). The pillared hall of Spooner has now been seen not to have extended farther w. Besides the 72 pillar spots located earlier, eight more spots belonging to the hall proper and four belonging to the entrance have

been traced. No boundary walls or railings or any wooden floors of the hall have been brought to light; nor is there any other structure contemporaneous with the hall. The hall was destroyed by fire in the Śunga period and their shattered fragments are found all over the site disproving Spooner's theory of their having descended deep into the earth. After the conflagration monasteries were constructed by Buddhists who occupied the site. The hall may not be a part of the palace of Aśoka seen by Fa-Hien as it had been destroyed long before his visit. A canal, 13 m wide and 3 m deep, probably to carry the pillars from the Ganga or the Son, has been traced to the s. of the hall.

The excavation has revealed that the habitation at Kumrahar continued from the Mauryan times to A.D. 600, when the site was abandoned to be re-occupied in the 17th century. Apart from the pillared hall, the earliest occupation, Pd I, is ascribable to before 150 B.C. characterized by coarse grey ware mixed with red ware, some of them inscribed, along with cast [3.1] and punch-marked coins. Pd II, c. 150 B.C. to A.D. 100, is represented by Śunga terracottas and coins of the 'lanky bull' type of Kauśāmbī and by a wall of brick, 30 cm square, and remnants of an apsidal structure. Pd III, c. A.D. 100 to 300, has yielded Kushan coins and terracotta human figurines with peaked head-dress as well as brick structures and remains of a monastic complex, including an apsidal shrine with a *stūpa*. A unique sealing bears the plan of a monastery. Pd IV, 300 to 450, has copper coins of Candragupta II along with typical Gupta terracottas. The discovery of a monastery-cum-sanatorium, identified by a seal with the legend *śrī-Ārogya-vihāre bhikṣu-saṃghasya*, is an important discovery. Pd V, 450 to 600, is represented by late Gupta and post-Gupta antiquities as suggested by the palaeography of the sealing legends and inscribed potsherds.

It is clear that the pillared hall of Kumrahar lying isolated at the s. outskirts of Patna can hardly be identified as a durbar hall of Candragupta Maurya. A guess may be hazarded that it was the assembly hall of the third Buddhist Council convened by Aśoka, with whom only we have evidence of the first use of stone for monumental buildings. Nor is there anything pre-Mauryan at the site. As Pataliputra had an earlier history a search was started in 1955-6 in e. Patna, which is thickly populated with little scope for excavation. However, small trenches were laid in the localities of Mahabirgarh, Sadargaly, Shah-Kamal road and Begamki-Haveli and in the compound of the Government Press (Sinha and Narain, 1970). Pd I as represented in the trenches is associated with the NBPW [11.16] of fine quality, black-and-red [11.6.4] and grey wares and Black-slipped [11.13] Wares. At the lowest levels are encountered terracottas of an archaic type, which may

go back to the 5th century B.C., with the ear, nose and hair indicated by pinched clay, the mouth by a deep horizontal cut, legs and arms by stumps of clay and fingers by notches. But in the middle and top layers of the Pd appear well-moulded clay figurines, which may belong to the 4th-3rd centuries B.C. No structural remains of the Pd have been found except a polished sandstone piece, 1.8 m × 91 cm bearing the bead-and-reel design, traces of walls of burnt brick, 27.4 × 26.7 × 0.76 cm, and terracotta ring-wells [14.15]. Another important discovery is a couchant bull of polished Chunar sandstone from a trench in Shah-Kamal road area, where a broken polished stone piece with the bead-and-reel designs and another with the same and an acanthus leaf design have also been recovered. Pd II, 150 B.C. to A.D. 300, has numerous flimsy walls of brick, 43 × 29 × 0.5 cm, terracotta ring-wells and numerous Śuṅga and Kushan terracottas, a gold amulet fashioned after a coin of Huviṣka with legends in Greek and Naigameṣa figures. In view of the very limited areas available for excavation no clear house plans have been detected. But there is no doubt that e. Patna was inhabited from the 5th century, that it formed part of the Mauryan architectural complex and that it continued under occupation at least till the 3rd century A.D.

Of the isolated Mauryan finds from Patna the most important are two nude polished sandstone torsos of Jaina *tīrthiṅkaras* found at Lohanipur with the plinth of a brick structure on the footing of which was found a worn-out punch-marked coin and the renowned life-size *yakṣī*, also of polished sandstone, from Didargang—one of the most remarkable sculptures of early historical India (Gupta, 1965).

Atekar, A.S., & Mishra, V., 1959, *Report on Kumrahar Excavations (Patna)*, 1951-5, Patna, Gupta P., ed.; 1965, *Patna Museum Catalogue of Antiquities*, Patna. Kumar, N., 1970, *Patna Dt Gazetteer*, Patna. Legge, J., 1886, *Travels of Fa Hien*, Oxford. McCrindle, J.W., 1877, *Ancient India as Described by Megasthenes & Arrian*, Calcutta; 1901, *Ancient India as Described in Classical Literature*, Westminster. Mukherji, P.C., 1898, *Report on the Excavations on the Ancient Site of Pataliputra (Patna-Bankipur)*, Calcutta. Sinha, B.P.; & Narain, L.A., *Pataliputra Excavations 1955-6*, Patna. Spooner, D.B., 1915, in *Jour. Royal Asiatic Soc. Waddell, L.A., 1892, Discovery of the Exact Site of Asoka's Classic Capital of Pataliputra, the Palibothra of the Greeks and Description of Superficial Remains*, Calcutta; 1903, *Report on the Excavation at Pataliputra (Patna), the Palibothra of the Greeks*, Calcutta.—A. GHOSH, V. MISHRA & B.P. SINHA

Patalpani, Dt Indore. Non-geometric microliths without pottery were found.

IAR 1956-7; 1957-8; 1963-4.

Patan¹, Dt Jabalpur. Microliths and black-and-red ware (both of unspecified nature) and NBPW [11.16].

IAR 1959-60.

Patan², Dt Jalgaon. Microlith tools consisting of flakes and cores of chalcedony, quartz, chert and jasper. The collection included a nicely worked awl and two tanged

arrowheads of chalcedony.

IAR 1953-4; 1954-5.

Patan³, Dt Jhalawar. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1963-4.

Patana, Dt Bhavnagar. Red Polished Ware [11.23] site in the Kalubhar valley.

IAR 1960-1.

Patapadu, Dt Kurnool. Site with painted pottery and Neolithic [4.6.8] implements. See SINGANAPALLI.

IAR 1967-8.

Patara, Dt Mainpuri. PGW [11.14] site.

IAR 1960-1.

Pataudh, Dt Mirzapur. A few dolerite tools largely of series I (Lower Palaeolithic [4.2]) were found near the village opposite Chopan on the left bank of the Son.

IAR 1959-60.

Patawan-Jor, Dt Rewa. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1963-4.

Patdi, Dt Rajkot. Harappa [4.9] site.

IAR 1965-6.

Pathakwadi, Dt Surat. Early Stone Age (Lower Palaeolithic [4.2]) site on the Ambica river yielding a number of choppers.

IAR 1968-9.

Pathandundi, Dt Raichur. Ash-mound [4.3] site.

AR Hyderabad Arch. Dept, 1935-6, p. 2.

Patharaha, Dt Mirzapur. A mound of the river Koi yielded sherds of black-and-red ware, Black-slipped Ware [11.13] and plain red ware. In this assemblage the NBPW [11.16] is absent. The site therefore seems to represent a transitional stage between the Chalcolithic cultures of the Vindhya [4.14.2] on the one hand and that associated with the NBPW [4.18.1] of the Ganga plains on the other.

IAR 1968-9.

Patharai, Dt Dhule. Microliths associated with ochre-coloured pottery. See DHAMDAI.

IAR 1957-8.

Pathardiha Raji, Dt Palamau. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1971-2.

Patharheri, Dt Rupnagar. PGW [11.14] site. (Same as PATHERHERI-COTI?)

IAR 1962-3. Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 122.

Pathari, Dt Vidisha. Early, Middle (Lower, Middle Palaeolithic [4.2, 3]) and Late Stone Age (Mesolithic [4.5]) site.

IAR 1968-9.

Patharia, Dt Panch Mahals. Late Stone Age (Mesolithic [4.5]) site on the bank of the Vishvamitri yielding cores, flakes and a few points.

IAR 1969-70.

Patharheri-Choti, Dt Rupnagar. PGW [11.14] site.

(Same as PATHARHERI?)

IAR 1964-5.

Pathori, Dt Saharanpur. OCW [11.5] site.

IAR 1967-8.

Pathre-khurd, Dt Ahmadnagar. Palaeolithic tools [4.2] as also Chalcolithic [4.14.6] and early historical [4.18.1] remains were found.

IAR 1959-60.

Pathrod, Dt Kutch. Historical site. See AJMEL.

IAR 1965-6.

Patinja (22°3'; 86°37'), Dt Mayurbhanj. See KULIANA.

Patkum, Dt Singhbhum. Lower Palaeolithic [4.2] site yielding handaxes, ovates and scrapers.

IAR 1962-3.

Patlokar, Dt Saharanpur. Śūnga-Kushan and medieval wares.

IAR 1964-5.

Patna¹, Dt Jalgaon. Early, Middle (Lower, Middle Palaeolithic [4.2, 3]) and Late Stone Age (Mesolithic [4.5]) tools were found in the gravel deposits near Patna and in the area nearby.

IAR 1969-70.

Patna², Dt Keonjhar. Series II (Middle Palaeolithic [4.3]) tools including points, scrapers, borers, burins, blades, cores and flakes as also microliths (of unspecified nature) were affected.

IAR 1958-9.

Patna³, Dt Patna. See PĀTALIPUTRA.

Patne, Dt Jalgaon. Excavation provided evidence of a succession of Middle and Upper Palaeolithic [4.3, 4] and Mesolithic [4.5] industries. The Middle Palaeolithic industry comprised scrapers, points, borers on flakes, blades and corresponding cores as well as burins. An ostrich egg-shell piece was found in association with the lithic tools. The Upper Palaeolithic industry was dominated by blades and burins or tools made on blades. The other finds in association with the stone tools included fresh-water shells, a few fragmentary unidentifiable animal bones and beads. The Mesolithic tools were chiefly made on chalcedony and included varieties of blades, lunates, triangles, trapezes, crescentic and other points and a small proportion of burins. This is the first open-air site in India which has given a continuous sequence of Stone Age cultures from the Middle Palaeolithic to the Mesolithic through the Upper Palaeolithic. The evidence is so clear here that each period and phase is marked by a change in the mode of sedimentation.

IAR 1972-3.

Patonda, Dt Dhule. Microliths association with ochre-coloured pottery. See DHAMDAL.

IAR 1957-8.

Patora-Khurd, Dt Jhansi. Lower Palaeolithic [4.2] site.

IAR 1963-4.

Patpad, Dt Kurnool. Neolithic [4.6.3] site. Of the large number of objects collected, noteworthy were a very small thin celt, a slick stone probably used for smoothing

woven material, pestle and a mortar. Much of the pottery is of interest, e.g., libation vessels, ring-stands, *loṭā*-shaped vessels and large bowls with a prominent spout lip.

Footo, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Pattadakal, Dt Bijapur. Lower Palaeolithic [4.2] tools, mostly rolled, were found in the bed of the MALA-PRABHA river. The tools comprised cleavers, chopper-chopping tools and handaxes of the Abbevillian and Abbevillio-Acheulian types. Megaliths [4.17.8] with port-holes and passage chambers as also early historical [4.18.11] material were also found. There was also late historical material probably contemporary with temples for which Pattadakal is famous.

IAR 1954-5; 1957-8. *Jour. Bombay Univ.*, 14, 4, pp. 10-28. *Karnataka Bharati*, 5, 2, pp. 35-42. Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 30-6.

Pattagadh, Dt Ganjam. Microliths (of unspecified nature).

IAR 1963-4.

Pattambi, Dt Palghat. Megalithic [4.17.10] site with burial jars and circular pits.

IAR 1968-9.

Pattanur Pazhassi, Dt Cannanore. Rock-cut possibly Megalithic.

IAR 1960-1.

Pattikinda, Dt Kurnool. Site yielding Neolithic [4.6.8] implements and pottery.

Footo, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Patupur. See GANGA VALLEY.

Patwa, Dt Mayurbhanj. Neolithic [4.6.7] tools.

IAR 1958-9.

Patwanjor, Dt Rewa. Middle Palaeolithic [4.3] site.

IAR 1963-4.

Pauli, Dt Jind. Mound yielding typical Harappa [4.9] finds such as painted pottery and terracotta triangular cakes besides copper rings reminiscent of the Copper Hoard culture [4.11].

IAR 1968-9.

Pauna, Dt Basti. Black-and-red ware (of unspecified nature).

IAR 1963-4.

Paunar (20°47'; 78°41'), Dt Wardha, located on the right bank of the river Dham, a tributary of the Wardha, with an impressive mound which is locally known as Qilla because of the remains of a massive medieval fortification and on which stands the modern habitation. The place has been identified with ancient Pravarapura, the capital of the Vākātakas of the main line who ruled over Vidarbha and the adjoining territories from the 3rd to 5th centuries. According to Mirashi, 1961, pp. 227-48, the capital of the Vākātakas was first at Nandivardhana (present Nagardhan near Ramtek is Dt Nagpur) and was later shifted to Pravarapura by Pra-

varasena II possibly after his 11th regnal year. However it has been pointed out that in none of the Vākātaka records has Pravara-pura been mentioned as capital, though it has been referred to as the place of issue of certain charters. Moreover the phonetic derivation of Paunar from Pravara-pura has been doubted. Paunar was excavated by the Dept of Ancient Indian History and Culture of Nagpur University in 1967 (*IAR* 1966-7, p. 27). The excavation revealed a four-fold sequence of cultures.

Pd I. This Pd is characterized by a thin black-and-red [4.13] pottery, a coarse red ware and a coarse red pottery with paintings in black. The last ceramic is interesting inasmuch as it has no parallels elsewhere and appears to have been confined only to parts of Vidarbha. The pottery is partly handmade and partly wheel-made. The slip varies from red to orange and the painted ornamentation is in black pigment. The repertoire of designs is extremely limited and comprises only geometrical patterns such as group of lines, latticed diamonds and triangles and sometimes dots. The characteristic vessel in this ware is the medium-sized jar with globular body and hooded rim. No metal was found in the deposits or this Pd, the beginning of which can thus be placed prior to the advent of iron; hence it has been dated to c. 1000-800 B.C.

Pd II. This Pd, beginning with the 4th-3rd century B.C., is marked by the introduction of full-fledged iron technology. The black-painted red pottery of the preceding Pd does not occur; the black-and-red ware, however, continues and becomes the predominant pottery. This Pd has been divided into two phases: Phase A (c. 4th to 1st century B.C.), and B (c. 1st century B.C. to 2nd century A.D.) on the basis of the occurrence of the Red Polished Ware [11.23]. Fragment of an amphora [11.19] has been recovered from the levels of Phase B.

Pd III. Dated to c. 3rd to 8th centuries the Pd is marked by the introduction of a bright-slipped red ware and structures of kiln-burnt brick. During a major part of the Pd the region witnessed the domination of Viṣṇukundins whose coins have been found in the excavation including a hoard of them.

Pd IV. Characterized by the occurrence of the Chinese Celadon Ware [11.25] and medieval glazed ware as also polychrome glass bangles, the Pd may be dated from c. 10th to 15th centuries. A coin of Muhammad Tughlaq has been found. Massive fortifications of dressed stone were constructed.

The remains of an impressive Gupta temple were discovered on the other bank of the river. During the digging for the foundation for some of the buildings in the area a number of sculptures were accidentally found. Many of them have been identified as depicting episodes from the *Rāmāyana*, whereas one is an early representa-

tion of Andhakāsura-vadha-mūrti Śiva. Stylistically they can be dated to the late 4th and early 5th centuries. Besides there is an exquisite life-size image of Gaṅgā, having on its pedestal a label inscription *Gaṅgā bhagavatī* in 6th-century characters.

Deo, S.B., & Dhavalikar, M.K., 1968, *Paunar Excavation* (1967), Nagpur. Mirashi, V.V., 1961, *Studies in Indology*, Sholapur, 2.—M.K. DHAVALIKAR

Pauni-khurd, Dt Jabalpur. Microliths (of unspecified nature).

IAR 1962-3.

Pauni (20°48'; 79°39'), Dt Bhandara, on the Wain-ganga at a distance of 82 km s.-e. of Nagpur on Nagpur-Bhandara road. It was noticed as an ancient site by Cousens in 1897 (Cousens, 1897). Subsequently J. Marshall and H. Hargreaves noted the picturesque fort wall and moat at the site (*ASI-AR* 1926-7, p. 240; 1927-8, p. 31), bespeaking its medieval occupation. In 1936 G.C. Chandra in his unpublished official communication reported on the different mounds at three localities of Pauni—Hardolala Tekdi, Jagannath Tekdi and Ghoda Ghat and the possibility of there having been *stūpas* here, following the discovery of large stone pieces, Brāhmī inscriptions of c. 2nd century A.D., small images and a stone relic with bone pieces, now of unknown whereabouts. Later on two important antiquities came to light: a *chāyā-stambha* [12.7] with the inscription of the Kṣatrapa Rupiamma and a copper-plate grant of Pravarasena II of the Vākātaka dynasty. The latest remains are the fort wall and moat mentioned above.

In 1968 was found near the Jagannath Tekdi a massive coping stone bearing inscriptions in early Brāhmī script on both the faces. Subsequent explorations by the ASI (Rao, 1970) brought out further antiquities comprising a massive stone figure of *yakṣa*, sculptured and inscribed railing pillars and a terracotta bangle having a repetitive negative designs of a female figure with rosette on top.

There are three mounds at Pauni: Jagannath Tekdi, a *stūpa* mound about 6 m high with a very recent Jagannath temple on top; Hardolala Tekdi to the n.-w. of the present town rising to a height of 7 m from the surrounding level; and Chandakapur Tekdi to the south of Jagannath Tekdi having the same height as Hardolala. All the three mounds were excavated by the Nagpur Univ. in 1969-70 (Deo and Joshi, 1972). Besides, the area designated as Ghoda Ghat on the left bank of the river is rich in remains of brick structures and ring-wells [14.15] indicating an early habitation. The area between Jagannath and Chandakapur mounds also gives evidence of extensive brick structures, possibly of a Buddhist monastery.

Excavation was restricted to three areas. Of these the

Pawaya

Jagannath Tekdi yielded a large number of antiquities besides the remains of a *stūpa* which was subsequently embellished by an elaborate *pradakṣiṇā-patha*, sturdy railings with sculptures and imposing gateways at the cardinal points. The earliest *stūpa*, with the diameter of 38.2 m right over the laterite [9.6], was built of burnt brick $40 \times 37 \times 10$ cm in dimensions, laid in mud mortar. The dome portion is badly disturbed. No clear indication of any circumambulatory path for this *stūpa* could be had. The first construction can be dated on the basis of its association with the NBPW [11.16]. The second phase of this complex involved the encasement in burnt brick of the *stūpa* which enhanced its diameter by 1.48 m. In addition to this around the *stūpa* was laid a 1.6 m wide *pradakṣiṇā-patha* of fine gravel with lime and earth mixed with or containing mica flakes. At the external periphery of this *patha* was erected a wooden railing evidenced by circular post-holes each about 16 cm in diameter. Thus in the second phase the *stūpa* had its diameter enlarged by 1.48 m and had a *pradakṣiṇā-patha* encircled by wooden railing. The *stūpa* received a second encasement after some time of unknown length, as a result of which it had a diameter of 41.2 m. Unlike the first, the second elaborate encasement was a planned effort inasmuch as the dome was covered with rectangular box-type brick construction with a filling of clay. On an average these boxes measured 4×3 m. Along with the covering and enlarging of the dome a ring of brick was constructed around the *stūpa* and wooden posts were sunk into it with a view to forming an inner peripheral railing, the precise nature of which cannot be ascertained. In the next stage the posts were replaced by octagonal stone uprights with sculptures of *yakṣas* on the outer face. Outside this inner railing was relaid a 2.78 m wide *pradakṣiṇā-patha* faced with flat slabs of stone on hard-pressed *murram* and compact brown clay. The outer periphery of this path was enclosed by another enclosure of massive sandstone uprights at a distance of 1 m from each other, horizontal *sūcīs* with lenticular section and coping stones whose rectangular shallow mortise holes accommodated the tenons in the centre of the top of upright pillars. The uprights of the inner railing were hexagonal, were at a distance of 1.10 m from each other and had a socket on the top which could accommodate the projection at the lower face of the coping stone. The faces of the uprights of the inner and outer railings were beautifully sculptured with the figures or *yakṣas*, Nāga Mucalinda, devotees and such motifs as *caitya-vr̥kṣa*, *dharma-cakra*, etc. The human figures as also the *yakṣa* ones are in the Śuṅga style indicating influence from Madhyadeśa. Most of the uprights and *sūcīs* have donative inscriptions.

In this phase, besides the *patha* and inner and outer railings were erected four massive gateways at the cardi-

nal points similar to those found at SANCHI and Bharhut. Thus in the 2nd-1st century B.C. Pauni had possibly the largest *stūpa*. The top of the *aṇḍa* had possibly the *vedikā* and a *chattrāvalī*, the fragments of the latter having been recovered in the excavation. In addition the *stūpa* complex seems to have been further embellished by a majestic monolithic pillar with a fluted capital having a socket at the top possible to accommodate a *cakra* or some other motif.

The *stūpa* seems to have degenerated in the Sātavāhana-Ksatrapa period as the replacement of some of the *sūcīs* with later palaeography, cruder delineation of sculptures and the find of later Sātavāhana coins and the Red Polished Ware [11.23] would indicate.

The Chandakapur Tekdi gave the remains of a *stūpa* with a diameter of 41.6 m without any railing or gateways. The technique of its construction is different from that of the Jagannath one, inasmuch as here a system of brick platforms of receding dimensions with the outer facing of baked brick and with tiers of clay and burnt brick in the interior has been employed. The reliquary [12.8] consists of a pot painted in black bands on light-brown, somewhat of the type found at RANGMAHAL in the Kushan period [11.24]. This *stūpa* can be dated on numismatic and ceramic evidences to between c. 1st century B.C. and 2nd century A.D. The *stūpa* seems to have been destroyed by floods.

The Hardolala Tekdi is merely an accumulation of debris and no structural remains has been encountered.

Thus Pauni has proved to be a link between c. and s. India and seems to have played a significant role in the transmission of c. Indian art traditions further down.

Cousens, H., 1887, *List of Antiquarian Remains in the C.P. & Berar*, p. 24. Deo, S.B., & Joshi, J.P., 1972, *Pauni Excavations (1969-70)*, Nagpur. Rao, S.R., 1970, in *Archaeologia*, 32, p. 56.—S.B. DEO

Pavagadh, Dt Panch Mahals. Lower Palaeolithic [4.24] tools such as choppers, scrapers, cleavers and rough handaxes were collected from the region around Pavagadh. Middle Stone Age (Middle Palaeolithic [4.3]) tools were also found. The microliths consisted of backed blades and cores. See CHAMPANER.

Pavateswar Mahadev, Dt Bhavnagar. Late Harappa [4.10] site. The recovered pottery included the dish-on-stand, handled bowl, etc.

IAI 1959-60.

Pavitram, Dt Coimbatore. Megalithic site with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Pavla, Dt Dhule. Lower Palaeolithic [4.2] tools.

IAI 1959-60.

Pawarjunada, Dt Indore. Ancient site (of unspecified nature).

IAI 1970-1.

Pawaya, Dt Gwalior, ancient Padmāvati, frequently

referred to in ancient literature, situated on the confluence of the Sindhu and Parvati. The site, over 4 sq km in extent, profusely strewn with brickbats, potsherds and late historical carved stones, was excavated by Garde of the Gwalior Arch. Dept during 1925, 1934, 1940 and 1941 (Garde, 1952), who found a brick structure of three terraced platforms, the first measuring 42.30 n.-s. and 42.90 e.-w., the intermediate one 85.5 m sq and the uppermost 48.61 sq m the total height being 9.60 m; the ground platform was according to him the latest. The flanking walls of the upper two platforms has highly ornate bricks with pilasters topped by small *caitya* arches. Terracotta plaques, originally placed between the pilasters, were found in abundance in the excavation. Evidently the structure was a terraced Gupta temple.

Pawaya is famous as well for its sculptural wealth, of which the images of *yakṣa* Mañibhadra, of the 1st or 2nd century A.D. or perhaps earlier, and of a Nāga king are the most remarkable. It has also yielded a few capitals, including a palm capital of the 1st century B.C. associated with Śaṅkarasana (Banerjea, 1956). The terracottas depict both secular and non-secular subjects.

Banerjea, J., 1956, *Development of Hindu Iconography*, p. 424.
Garde, M.B., 1952, in *Proc. Indian History Congress*, p. 4.—K.P. NAUTIYAL.

Payam, Dt Cannanore. Megalithic [4.6.10] rock-cut cave.

IAR 1960-1.

Pazhayannur (10°13'; 76°13'), Dt Trichur, 10 km from Naduppakund, with 27 megaliths [4.17.11], all of the cist type, one of which, with an outer diameter of 5 m, was excavated on 1974 by the M.S. Univ. Baroda. Both externally and internally it has the same features as the excavated one at MACHAD, except that the stone circle is of granite and that there is a hole at the centre of the outer vertical slab. The grave goods are also comparable with those from MACHAD.

Mehta, R.N., & George, K.M., 1978, *Megaliths at Machad & Pazhayannur, Talpally Taluka, Trichur Dt, Kerala State, Vadodara*.

Peacock Hill, Dt Bellary. Neolithic [4.6.9] pointed-butt polished stone axes.

Brown, C., 1917, *Catalogue of Prehistoric Antiquities in the Indian Museum, Simla*.

Peari, Dt Allahabad. Middle Stone Age (Middle Palaeolithic [4.3]) factory site in the BELAN VALLEY, TUNDIARA VALLEY.

IAR 1970-1.

Pechribari-pada, Dt Dhule. Microliths (of unspecified nature).

IAR 1959-60.

Peddabankur, Dt Karimnagar. In addition to a few stray Neolithic implements [4.6.8], the cultural sequence is as follows: (1) Megalithic [4.17.7] and (2) Sātavāhana period. Excavation laid bare a huge brick structure

measuring 30.8 m square constructed over a rubble foundation. On the n.-e. corner inside the structure was found a well constructed of wedge-shaped bricks. About 50 m away was located a cistern and a square basin. Another structure was the oval-shaped basement of a shrine measuring 10.30 × 7.65 m provided with an entrance on the n. side. Along with these structures were found several circular bases in rubble masonry which might have been used for supporting a platform for the deity. On the basis of the associated objects the shrine is assignable to c. 3rd century B.C. Other antiquities included objects of iron, copper and silver, gamesmen, terracotta figurines, beads, a hoard of silver punch-marked coins [3.1] and several Sātavāhana coins in copper.

IAR 1970-1; 1971-2; 1972-3.

Peddadandaluru. See PEDDAMUDIYAM.

Peddadandukonda, Dt Anantapur. Neolithic [4.6.8] habitation site. See AKKAMMAKONDA.

IAR 1965-6.

Peddagopavaram, Dt Nellore. Palaeolithic site yielding Acheulian handaxes, flakes, side, hollow and end scrapers, baldes and awl-like tools.

Aiyappan, A., 1942, *Manley Collection of Stone Age Tools*, Mem. ASI, 68, p. 4.

Peddakalvanchi, Dt Kolar. Megalithic [4.17.8] stone circles.

IAR 1970-1.

Peddakothaliki, Dt Kurnool. Late Stone Age (Mesolithic [4.5]) site.

IAR 1964-5.

Peddammudiya, Dt Cuddapah. The mound on the n. bank of the Kunderu appears to date from Neolithic [4.6.8] times, but occupation no doubt continued for many centuries, and most of the finds belong to a much later epoch. They include gold, copper and lead coins, gold ear-rings, bronze and ivory finger rings, sculptures and a variety of beads, pottery, iron implements and bones. Sherds of Megalithic Black-and-red Ware [11.15] were also found. A few finds of similar description were also made at Peddadandaluru in the same taluka, viz. Jammaladagu.

ASI—AR 1904-5. IAR 1961-2; 1967-8.

Peddannayanidurgam, Dt N. Arcot. Megalithic [4.17.9] site with dolmens and stone circles.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Peddandluru, Dt Cuddapah. An extensive site yielding tools of the Early (Lower Palaeolithic [4.2]) and Late Stone (Mesolithic [4.5]) Ages and located in the Kanyatirthan area. Other finds included Neolithic [4.6.8] polished stone axes, microliths, sherds of a black-painted red ware and a coarse handmade grey ware. An adjacent site yielded a large number of Megalithic burials [4.17.7] including cairns, circles and cists. (Same as

PEDDADANDALURU(?)

IAR 1962-3.

Peddapalli, Dt Karimnagar. Mesolithic [4.5] site.

Gururaja Rao, B.K., ed., 1978, *Decade of Arch. Studies in s. India*, Dharwar, p. 49.

Pedhamli, Dt Ahmadabad (?). Lower Palaeolithic tools [4.2] were found on the right bank of the Sabarmati, s. of Pedhamli.

Foote, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Pednagar, Dt Ahmadnagar. Microliths (of unspecified nature).

IAR 1956-7.

Peechi, Dt Trichur. Large Megalithic [4.17.10] jar with bowls, vases, etc.

IAR 1966-7.

Peepalya-Bawli, Dt E, Nimar. Tools of Series II (Middle Palaeolithic [4.3]) and microliths (of unspecified nature)

IAR 1960-1.

Pehoa, Pehowa, (29°59'; 76°35'), Dt Kurukshetra. PGW [11.14] site. Ancient Prthūdaka. See KURUKSHETRA.

ASI—AR, 14, p. 101. AI, 10 & 11, 1954 & 1955, p. 141. IAR 1964-5. Suraj Bhan, 1975, *Excavations at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 124.

Pena Raghunathpur. See CHANDRAPRABHA VALLEY.

Penchikalapadu, Dt Kurnool. Neolithic [4.6.8] implements along with microliths (of unspecified nature) and sherds of the burnished grey and black-painted red wares.

IAR 1962-3.

Pengore, Dt Bharatpur. OCW [11.5], PGW [11.14] and black-and-red ware [11.6.3].

IAR 1965-6.

Pennagaram, Dt Dharmapuri. Megalithic [4.17.9] burial site.

IAR 1969-70.

Perajpur, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1961-2.

Perambai, Dt S. Arcot. Megalithic [4.17.9] site.

AI, 22, 1966, p. 33.

Perambair, Perumbair, Dt Chingleput. Excavation was undertaken at Perambair, though prehistoric remains exist within the boundaries of seven other villages, viz. Acharapakkam, Kadamalaiputtur, Sitapuram, Thenpakkam, Thinmapuram, Thenmekkadu and Uthamanallur. Megalithic [4.17.9] remains consist of stone circles of sizes varying from 2.5 to 18 m in diameter and are formed of rough stone boulders. The deposits are generally found at a depth of .75 to 2 m below surface and are contained in long oblong pottery cists rounded at the ends and standing on two or three rows of short legs. Other antiquities comprise stone and iron implements and weapons, pottery, bones and shell ornaments. Neolithic [4.6.10] implements were also found.

ASI—AR 1904-5, 1908-9, AI, 4, 1947-8 p. 296.

Perari, Dt Palghat. Microliths (of unspecified nature).

IAR 1971-2.

Periakalandai, Dt Coimbatore. Megalithic [4.17.9] port-holed cists.

IAR 1962-3.

Periakattalai, Dt Madurai. Megalithic [4.17.9] urn burials.

IAR 1958-9.

Perimbe, Pondicherry. Megalithic [4.17.9] site.

Casal, J.-M., & C., 1956, *Site urbain et Sites funéraires des Environs de Pondichéry-Virampatnam-l'outtrapalaeon*, Southoreny, Paris.

Peringothikurussi, Dt Palghat. Microlithic (of unspecified nature) site.

IAR 1971-2.

Perisandra, Dt Kolar. Megalithic [4.17.8] site with menhirs.

Indian Antiquary, 11, 1882, pp. 86-8. Seshadri, M., 1956, *Stone-using Cultures of Pre- & Proto-historic Mysore*, London.

Periyanayakanpalayam, Dt Coimbatore. Megalithic [4.17.9] urn burial.

IAR 1957-8.

Periyur, Dt Madurai. Megalithic [4.17.9] cairn circles.

IAR 1958-9.

Permiyam, Dt Coimbatore. Megalithic [4.17.9] site with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Person, Dt Gwalior. Early historical site yielding the black-and-red ware and NBPW [11.16].

IAR 1971-2.

Perumalpalaiyam, Dt Tiruchchirappalli. Megalithic [4.17.9] site with stone circles having single or double rings, cairn circles and dolmenoid cists mostly of undressed boulders.

Gururaja Rao, B.K., 1971, in *Prof. Nilakanta Sastri Felicitation Vol.*, Madras.

Perumalpatti, Dt Madurai. Late Historical [4.19.10] habitation site with copper coins of Rājārāja I.

IAR 1958-9.

Perumbair. See PERAMBIAIR.

Perumbakkam, Dt Chingleput. Site with Black-and-red Ware [11.5.3] and red and red-slipped wares.

IAR 1967-8.

Perumbalai¹, Dt Dharmapuri. Megalithic [4.17.9] burial sites.

IAR 1969-70.

Perumbalai², Dt Salem. Megalithic [4.17.9] site with dolmens.Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Perumbattur, Dt Tirunelveli. Prehistoric site (of unspecified nature).

ASI—AR 1936-7. Cammiade, L.A., *Gazetteer of Tinnevely Dt.*, p. 409.

Perumbedu, Dt Chingleput. Megalithic urn burial [4.17.9] site.

AI, 22, 1966, p. 27.

Perumkadambalur, Dt Thanjavur. Megalithic [4.17.9] urn field in Nagapattinam Taluka, containing pyriform urns and associated pottery and seemingly connected with a habitation site.

IAR 1955-6.

Perunagar, Dt Chingleput. Megalithic [4.17.9] site with cairns.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Perundurai, Dt Coimbatore. Russet-coated Painted Ware [11.22].

IAR 1961-2.

Perungalattur, Dt S. Arcot. Megalithic [4.17.9] site with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Perungalur, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 1, pp. 515-8; 2, p. 933.

Perunkottur Dt Tirunelveli. Prehistoric site (of unspecified nature).

ASI-AR 1936-7. Cammiade, L.A., *Gazetteer of Tinnevely Dt*, p. 409.

Perunthalpara, Dt Trivandrum (?). Megalithic [4.17.10] site with port-holed cists.

AI, 4, 1947-8, p. 307.

Perur¹, Dt Coimbatore. The site, situated on the w. bank of the river Noyyal, a tributary of the Kaveri, and locally known as Nattam, revealed a sequence of three Pds each overlapping with the other, thus suggestive of a continuous occupation. Pd I (1st to 3rd centuries A.D.) yielded the Megalithic Black-and-red Ware [11.15] and plain red and all-black wares. Pd II (3rd to 6th centuries) had the Russet-coated Painted Ware [11.22] as its principal ceramic industry. In the late levels a new pottery, viz. blackish-grey ware, was introduced. Pd III (6th-9th centuries) was represented by walls of baked brick and a covered stone drain. The bulk of the pottery was unslipped.

IAR 1970-1.

Perur² Dt Tiruchchirappalli. Megalithic [4.17.9] cists and urns.

IAR 1960-1.

Peth-Bhansuli, Dt Chanda. Microliths (of unspecified nature).

IAR 1960-1.

Petia, Dt Bharuch. Middle (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) sites.

IAR 1969-70.

Pet Sirur, Dt Gulbarga. Megalithic [4.17.8] site.

Jour. Geological Survey of Hyderabad, 5, 1, p. 56.

P.G. Palya, Dt Mysore. Black-and-red [11.15.3] and Russet-coated Painted [11.22] Wares and Megalithic cist burials [4.17.8].

IAR 1961-2.

Phala (22°31'; 70°18'), Dt Jamnagar. Harappa [4.9] and

late Harappa [4.10] site corresponding to RANGPUR II B.

IAR 1954-5. *AI*, 18 & 19, 1962 & 1963, p. 206.

Phalauda, Dt Meerut. Historical mound (of unspecified nature).

IAR 1970-1.

Phalodi, Dt Jodhpur. Microlithic (of unspecified nature). site near the by-pass 2.5 km s. of Phalodi.

Man & Environment, 2, 1978, p. 75.

Phaphamau, Dt Allahabad. Early historical site yielding NBPW [11.16].

IAR 1963-4.

Pharengi, Dt Mainpuri. PGW [11.14] and NBPW [11.16] site.

IAR 1961-2.

Phera, Dt Kangra. Lower Palaeolithic [4.2] site in the BEAS VALLEY.

Mohapatra, G.C., 1966, in *Bulletin Deccan College Res., Inst.* Poona, pp. 221-37.

Pherupur, Dt Saharanpur. Early historical [4.18.1] site.

IAR 1970-1.

Phetri, Dt Nagpur. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1961-2.

Phinodara, Dt Chittaurgarh. A Banas culture [4.14.1] site near Pind on the Pind, a tributary of the Wagan.

Man & Environment, 3, 1979, p. 91.

Phopada, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1964-5.

Phulejawala-Tibba, Dt Ganganagar. Microliths (of unspecified nature), Rang Mahal Ware [11.24] and terracotta and shell bangles in the SARASVATI VALLEY.

Unpublished.

Phuljhari hill, Dt Santal Parganas. Microliths (of unspecified nature) were found at the site about 10 km to the left bank of the Jamtara-Dumka road from Dubrajpur.

IAR 1961-2.

Phul Timbo (Bhojavadar), Dt Bhavnagar. Harappa [4.9] and early historical site [4.18.2].

IAR 1971-2.

Phulvadi (Samadhiyala), Dt Bhavnagar. Harappa [4.9] site.

IAR 1971-2.

Phulwaria, Dt Ghazipur. Historical site (of unspecified nature).

IAR 1962-3.

Phupgaon, Dt Akola(?). Middle (Middle Palaeolithic [4.3]) site and Late Stone Age (Mesolithic [4.5]) site.

IAR 1965-6.

Pichhari, Dt Monghyr. Site with two cultural phases, respectively with microliths (of unspecified nature) and Black-slipped Ware [11.13].

Arch. Congress & Seminar, 1972, Kurukshetra, 1976.

Pichikelapalem, Dt Krishna. Sites with dolmens [4.17.7].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Pickak, Dt Jodhpur. Site on the river Luni with Series II (Middle Palaeolithic [4.3]) tools.

IAR 1958-9.

Piki, Dt Saharanpur. Harappa [4.9] and OCW [4.12] site.

IAR 1966-7.

Piklihal, Dt Raichur, in Taluka Lingsugur (16°7'; 76°34'), about 25 km w. of MASKI, an extensive site about 2 km n.-w. of the village at the foot of a roughly e.-w.-oriented granite hill. Allchin discovered the site with remains of an essentially Neolithic [4.6.9] habitation, remnants of an ash-mound [14.3], megaliths [4.17.9], stone alignments [4.17] and a sprinkling of early historical remains, rock paintings and bruising (13) and excavated it in 1952 with the assistance of the Dept of Arch. and Museums, Andhra Pradesh (Allchin, 1960). Among the eight trenches laid by him at seven sites, numbered I, II etc., the deposits at Sites I and VII are divisible into 11 and 9 layers respectively. In the uppermost five layers are found remains of the early historical [4.18.11] and Iron Age Megalithic cultures such as the Russet-coated Painted Ware [11.22], Black-and-red Ware [11.15.3] and red ware as well as fragments of iron objects. The underlying layers contain Neolithic remains. At Sites II and III Megalithic cairn circles have been partially opened and at Site IV menhir of the stone alignment examined. The trench at Site V reveals early medieval remains.

The Neolithic culture has been divided into two phases, upper and lower, on the basis of the typo-technological characteristics of the pottery and other features as well as the mode of living of the people. In the lower phase are remains of simple domestic structures consisting of a well-beaten circular floor with undressed stone boulders placed juxtaposed at the edge all round presumably to support a wall of perishable material. Tools such as pecked and ground stone axes, chisels of dolerite and parallel-sided blades and microliths of chert and chalcedony together with handmade pottery, burnished as well as unburnished, of grey, black, buff, chocolate and red, some with post-firing red ochre or pre-firing purple ochre paintings, are the features of this phase. Thick-sectioned troughs, urns, vases, some with a long spout and bowls and lids of various types are the main pottery types, besides perforated jars used perhaps as incense-burner or for cooking in steam. The pre-firing paintings are usually geometrical designs. That the people domesticated the ox, sheep and goat is indicated by remains of these animals. Terracotta human, animal and bird figurines found in fragments were probably used as toys or for rituals.

These pit-burials that have been exposed contain re-

mains of human skeletons laid in an extended manner with burial furniture such as bowls, a spouted pot and particularly parallel-sided blades. There are traces of offering meat to the dead as a part of the burial rite in one of the pits. One of the buried was a female and the people were well-built, tall and racially ancestors of the present mixed Dravidian inhabitants.

In the upper Neolithic some changes in the living pattern are discernible. The floors or houses are well-rammed. At the edge are fixed wooden posts supporting the walls of woven reeds smeared with mud. Inside are a hearth, three stones arranged as rest for vessels, etc., and outside is a saddle quern [6.19] for grinding. Besides stone tools of the types of the preceding phase, that copper tools also were in use is evidenced by the occurrence of pieces of a bowl of that metal. Even in the method of making pottery there is a change: turntable is now used. Besides the pottery fabrics of the earlier phase, pottery of olive-green and mottled surface appear for the first time. In the late stage of this phase there occurs the red-painted black pottery of the late Jorwe fabric [11.11] in a limited number, obviously of an intrusive nature from the Chalcolithic culture [4.14.6] of the upper Bhima valley and Godavari region. Beads are only a few, the ones found being of magnesite, shell and carnelian.

Layer 5 indicates a thin overlap between the Neolithic-Chalcolithic and the Iron Age Megalithic and in the four layers above are the remains of the Megalithic and early historical periods including the Black-and-red Ware, Russet-coated Painted Ware, imitated Rouletted Ware [11.21], Red Polished Ware sprinklers [11.23] and iron objects with a few sherds of medieval pottery in the uppermost. Varieties of beads of different materials such as rock crystal, agate, bloodstone, lapis lazuli, lac and glass, with a majority of shell and magnesite, occur in large numbers in the early historical phase. Iron objects include a sickle, a knife, an arrowhead and nails. Copper is represented by a few objects such as chisel and disc. Besides the cow and ox, sheep and goat, the buffalo was also domesticated.

Some pots of the Black-and-red Ware and ware from layer 5 as well as layers 4, 3, and 2 are similar to those from the partially excavated megaliths, suggesting that the users of pottery of these fabrics are the builders of the megaliths near by.

At Sites II to IV are cairn stone circles and stone alignments. Three of the circles have some distinct features of their own. One encloses a chamber formed by the line of undressed boulders with an opening on the s. serving as entrance. Between the circle and the chamber are scoriaceous ash lumps. On the s. side of the circle is an oval enclosure formed by two rows of medium-sized boulders with an opening in alignment with that of the

chamber. Another group of four cairn circles is within a roughly rectangular enclosure. The other is a double-line square containing scoriaceous ash lumps within the inner square. It has also an oval-shaped enclosure on the e. side. The megalith is partly destroyed.

The stone alignments consisting of very huge and tall boulders of immense girth set upright in rows are located in three areas. Partial excavation of the megaliths at Site II has revealed pottery of the early Iron Age similar to those of layer 5 of Sites I and VII. The excavation of a menhir of the stone alignment in Site III shows that it was buried to a depth of about 50 cm and was packed well with granite chips all round; it is non-sepulchral in function.

The lower Neolithic, the upper Neolithic, the Iron Age Megalithic and the early historical are stratigraphically and in relation to the UTNUR excavation respectively dated to c. 2000-12550 B.C.; c. 1250-550 B.C.; c. 550-100 B.C.; and the 1st to the 3rd centuries A.D.

There are many rock paintings, bruising and engravings at as many as 12 spots in the central hillocks encircling the sites. The paintings, mostly in red ochre, are in varied styles. In one shelter are a large-sized lizard, sheep, dancing human figures with upraised hands and hair-dress, a tree with stylized branch and a bull; in another again a lizard, snake, elephant and geometrical designs; and in still another a human figure with raised arms and legs, looking like a giant termite, corybantic in style. At another spot are mostly bulls, one of them standing before a man and sambar deer. These are in silhouette or outline, probably the oldest in the series. In two other places are red-ochre paintings consisting of men-at-arms holding swords or spears, horse-riders, etc., with a lime-wash, stylistically of a later date.

The numerous bruising consist largely of bulls and humans, some resembling in style the paintings of the earlier age. They are in either outline or silhouette. Besides there are bruising depicting the horse, buffalo, sambar, gazelle, sheep, goat, etc., of a later date. The rock paintings and bruising similar to them are probably of the overlap phase. The engravings of the late historical period include *nāga*, *saikha*, and human foot.

Allchin, F.R., 1960, *Piklhal Excavations*, Hyderabad.—A. SUNDARA

Pilakhni, Dt Saharanpur. Site with Harappa Ware [11.3].

IAR 1963-4.

Pilana, Dt Karnal. Late Harappa [4.10] site.

Haryana Studies in History & Culture, p. 138.

Pilavaram, Dt Kolar. Megalithic [4.17.8] site with stone circles

Information from C. Krishnamurthy through A. Sundara.

Pillalapalli, Dt Anantapur. Neolithic [4.6.8] habitation site. See AKKAMMAKONDA.

IAR 1965-6.

Pilleru, Dt Chittoor. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1962-3.

Pillipatti, Dt Dharmapuri. Megalithic [4.17.9] cairn circles.

IAR 1970-1.

Pilukheri, Dt Rajgarh. A site of the Lower Palaeolithic [4.2] handaxe culture.

IAR 1957-8.

Pimpaladar, Dt Nasik, Chalcolithic [4.14.6] painted pottery of the Jorwe complex [11.11] was found including the concave-sided bowl and spouted vessel. Noteworthy amongst the painted designs was the motif of the deer with wavy horns. Besides, thick grey ware similar to that of the earliest levels of BRAHMAGIRI was found.

IAR 1957-8.

Pimpalgaon, Dt Bhandara. Megalithic site. See 4.17.6.

Pimpalgaon-fungi, Dt Ahmadnagar. Chalcolithic [4.14.6] and early historical [4.18.9] site.

IAR 1959-60.

Pimplas, Dt Dhule. Lower Palaeolithic [4.2] tools were found at a site opposite Pimplas on the Tapti which is a Chalcolithic [4.14.6] site with a rich collection of microliths consisting of fluted cores with single or multiple striking surfaces and a few with crested-ridge technique [16.15.2], parallel-sided and backed blades, points, crescents and crested-ridge flakes. See UDDAMGARH.

IAR 1956-7; 1958-9.

Pimplod, Dt Dhule. Microliths and sometimes neoliths were found in association with the black-on-red painted and ochre-coloured pottery. Alongside was also found a coarse grey ware similar to that from the Chalcolithic levels of BRAHMAGIRI and BAHAL. See DHAMDAL.

IAR 1957-8; 1958-9.

Pimpri, Dt Dhule. Late Stone Age (Mesolithic [4.5]) site.

IAR 1966-7.

Pimprivalan, Dt Ahmadnagar. Series II (Middle Palaeolithic [4.3]) tools and Chalcolithic [4.14.6] remains. The early historical period [4.18.9] was marked by dull-red and black-slipped pottery.

IAR 1958-9.

Pind, Dt Chittaurgarh. Site on the river Pind, a tributary of the Wagan, 3 km from PADALIYA. A number of sites in the vicinity of the village yielding typical painted black-and-red ware along with the associated pottery representative of the Banas culture [4.14.1]. See PADALIYA.

Man & Environment, 3, 1979, p. 91.

Pindara, Dt Jamnagar. Early Stone Age (Lower Palaeolithic [4.2]) site with cleavers, large flakes and choppers.

IAR 1965-6.

Pindrawal, Dt Bulandshahr. Grey ware, red ware of the Śūnga-Kushan period and medieval ware.

IAR 1970-1.

Piprahwa

Pinjar Jhadi Pada, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1966-7.

Pinjaura, Dt Saharanpur. Harappa [4.9] and OCW [4.12] site.

IAR 1966-7.

Pinjore, Dt Rupnagar. Pebble tools resembling the Early Sohan [4.2] were found in a nullah along the road not far from Pinjore. Terrace 1 of the river SIRSA near Pinjore yielded a few shouldered hoes of triangular shape.

IAR 1959-60; 1971-2.

Pinyani, Dt Kathua. Terrace 2 of the Ravi yielded the pre-Sohan [4.2] type of huge flakes, rolled and heavily patinated early Sohan unifacial pebble choppers and Clactonian and Levalloisian flakes.

IAR 1965-6.

Pikad, Dt Jodhpur. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1959-60.

Pipalda. See 4.6.3.

Pipalgaon¹, Dt Bhandara. A dolmen [4.17.6] was discovered.

ASI—AR 1930-40.

Pipalgaon², Dt Chanda. Late Stone Age (Mesolithic [4.5]) site.

IAR 1967-8.

Pipalia¹, Dt Rajkot. Early historical [4.18.2] site.

IAR 1958-9.

Pipalia². See 4.6.3.

Pipargaon, Dt Etah. Site with PGW [11.14] and NBPW [11.16].

IAR 1959-60.

Pipari¹, Dt Basti. NBPW [11.16] site.

IAR 1962-3.

Pipari², Dt Jabalpur. Tools of Series I (Lower Palaeolithic [4.2]).

IAR 1959-60.

Piparia¹, Dt Bharuch. Late Stone Age (Mesolithic [4.5]) site.

IAR 1960-1.

Piparia², Dt Damoh. Middle Palaeolithic [4.3] site.

AI, 17, 1961, pp. 5-36.

Piparia³, Dt Dhule. Tools of Series II (Middle Palaeolithic [4.3]) on the river Kopra.

IAR 1958-9.

Piparia⁴, Dt Jabalpur. In a gravel bed over 40 artefacts were found *in situ* representing the earliest phase of the Chellean and illustrating the evolution of the handaxe from the pebble to the earliest Abbevillian stages [4.2]. Acheulian tools were found in sandy layers deposited in cross-current just above the second gravel. The scraper-cum-point industry—Series II (Middle Palaeolithic [4.3])—was found in deposits with late Acheulian tools.

IAR 1958-9; 1959-60; 1963-4; 1968-9.

Piparia⁵, Dt Satna. Excavation brought to light remains

of a Gupta temple belonging to c. 5th century.

IAR 1968-9.

Piparia Marhia, Dt Damoh. Middle Palaeolithic [4.3] site.

AI, 17, 1961, pp. 5-36.

Piparia Maria, Dt Dhule. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1958-9.

Piparla, Dt Nanded. Late Stone Age (Mesolithic [4.5]) site.

IAR 1970-1.

Piplai, Panth, Dt Ujjain. Early historical [4.18.7] site.

IAR 1971-2.

Pipli Khera, Dt Rohtak. Grey-ware site.

Jour. Haryana Studies, 3, 1, p. 6.

Pipradih, Dt Mirzapur. Microliths (of unspecified nature).

IAR 1962-3.

Piprahwa (27°26'; 83°7'), Dt Basti, near the border of Nepal, well-known for having yielded one of the earliest relic caskets [12.8] with Brāhmī inscription in the excavation by Peppé, an English zamindar of the area, who bored a shaft in the *stūpa* in 1897-8 (Peppé, 1898). At a depth of 5.6 m he came across a massive sandstone box which contained a large quantity of valuables and five caskets, four of steatite and one of crystal [12.8]. One of the steatite caskets carried an inscription, which according to one interpretation (by Bühler) contained the relics of Buddha himself and according to another (by Fleet) those of the kinsmen of Buddha. P.C. Mukherjee conducted limited excavation here in 1899. On the basis of the inscription on the casket he felt that Kapilavāstu, the capital of the Śākya to which clan Buddha belonged, should be sought not very far from it. Mitra, 1972, p. 253, also declared that Piprahwa had a reasonable claim for being a part or suburb of Kapilavāstu and its surrounding villages like GANWARI being the site of Kapilavāstu itself. Apart from the views of previous explorers, the inscription on the casket found by Peppé implied that the relic-yielding *stūpa* was the same as the one that the Śākya constructed at Kapilavāstu over their share of the corporeal relics of Buddha received by them. Secondly, the distance of 9 miles (14.48 km) from Kapilavāstu to Lumbini as recorded by the Chinese traveller Fa Hien corresponds well to the distance from Piprahwa to Lumbini, the birth-place of Buddha.

To settle the long-standing controversy the writer started excavation at the site in 1971 on behalf of the ASI. In 1972 he came across fresh relic caskets contained in two burnt-brick chambers at a depth of 6 m, i.e. further below the massive box found by Peppé. The two soapstone caskets contained charred bones. The caskets were contemporaneous with the NBPW [11.16].

In 1973 the cells and the veranda on the n. side of the e. monastery yielded terracotta sealings with the legend

Kapilavastu. The sealings have not been found in a hoard but occurring at different levels and spots ranging between 1.05 and 1.75 m in depth. The legend on the sealings in Brāhmī characters of the 1st-2nd centuries A.D. can be classified into three groups. One of them reads *Devaputra-vihāre Kapilavastu-bhikkhusaṅghasa* and the second *Mahā-Kapilavastu-bhikkhusaṅghasa*, while the third carries name of monks one being Sarandasa. In 1974 the lid of a pot carrying the inscription of the first group was also found. The inscription on the sealings and the lid was the deciding evidence in the identification of Kapilavastu.

Three structural phases, with caskets at three different levels, have been distinguished in the *stūpa*. The caskets of the first phase have been found in brick chambers at a depth of 6 m, the second, mentioned above, at a depth of 5.6 m in the massive sandstone box by Peppé and the third (only one) at a depth of 3.05 m also by Peppé. In the last phase the base of the *stūpa* was converted into a square providing niches for sculptures.

The c. monastery was built in four phases. There are other monasteries on the n., s. and w. The n. and s. ones have only two structural phases whereas the w. one has three. All of them face the *stūpa*. The cells of the monastery are generally planned around an open central courtyard and a covered veranda. On the n.-w. fringe of the mound a huge meeting hall paved with brick has been exposed. The hall also faces the *stūpa* with the entrance towards s. All around the hall small rooms have been observed.

Piprahwa remained under occupation approximately from the 5th century B.C. to the 3rd century A.D., when the site was engulfed in a fire and abandoned. The limited antiquities from the site include copper bowls and *thālī*, stone weight, iron pan, hook, nail and sockets, copper Kushan and Ayodhya coins, punch-marked coins both in copper and silver [3.1], copper antimony rod [18.1] and a borer, stone head, terracotta and carnelian beads, a terracotta mask and fragments of the NBPW.

Mitra, D., 1972, *Buddhist Monuments*, Calcutta. Mukherjee, P.C., & Smith, V.A., 1969 (reprint), *Antiquities of Kapilavastu, Tarai of Nepal 1899*, Varanasi. Peppé, W.C., 1898, in *Jour. Royal Asiatic Soc.*, 1898. Srivastava, K.M., 1977, in *Vishveshvaranand Indological Jour.*, 15; 1978, *Kapilavastu*, Nagpur.—K.M. SRIVASTAVA

Pir, Dt Dhule. Chalcolithic [4.14.6] site with microliths and black-painted red and burnished grey wares.

IAR 1962-3.

Pirkamaria, Dt Ganganagar. Rang Mahal Ware [11.24] of a late variety in the SARASVATĪ VALLEY.

Unpublished.

Pirlapalli, Dt Medak. Prehistoric burials (of unspecified nature).

IAR 1962-3.

Pirnagra Deorhi, Dt Monghyr. NBPW [11.16] site.

IAR 1965-6.

Pirtalavadi, Dt Kutch. Historical site (of unspecified nature). See AJMEL.

IAR 1965-6.

Pirthan, Dt Solan. Lower Palaeolithic [4.2] site in the SIRSA VALLEY.

Mohapatra, G.C., 1966, in *Bull. Deccan College Res. Inst.*, p. 224.

Pirthinagar, Dt Lucknow. NBPW [11.16] site.

IAR 1964-5.

Pirhipur, Dt Sagar. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1961-2.

Pirwada Khetar, (23°20'; 70°00'), Dt Kutch. An extensive low mound yielding Harappa [11.3] red ware, represented only by thick sherds of the jar and bowl. A large number of fluted cores and parallel-sided blades on chalcedony and one on chert were found. The site was possibly a camping place and does not indicate long and permanent occupation by Harappans. Coarse black-painted red ware akin to the Rang Mahal Ware [11.24] was also found.

IAR 1965-6.

Pirwalabasa, Dt Kangra. Lower Palaeolithic [4.2] site in BANGANGA VALLEY.

Mohapatra, G.C., 1966, in *Bull. Deccan College Res. Inst.*, pp. 221-37.

Pitalkhora caves, Dt Aurangabad. Middle and Late Stone Age (Middle Palaeolithic [4.3] and Mesolithic [4.5]) tools were found in the vicinity of the early historical Buddhist caves on the either bank of Pippalakhora nullah.

IAR 1965-6.

Pitar (22°41'; 70°32'), Dt Jamnagar. Late Harappa [4.10] site corresponding to RANGPUR II B and II C.

AI, 18 & 19, 1962 & 1963, p. 206.

Pitaria (21°35'; 70°55'), Dt Rajkot. Two cultural Pds, the earlier one representing Harappa culture [4.9] and the later the Lustrous Red Ware [11.9] culture, were distinguished.

AI, 18 & 19, 1962 & 1963, p. 206.

Pithad, Dt Rajkot. Harappa [4.9] site.

IAR 1959-60.

Pithadia, Dt Rajkot. Site with Harappa [11.3] and Lustrous Red [11.9] Wares.

IAR 1956-7; 1957-8.

Pithapuram, Dt E. Godavari. Mound with remains of brick structures and sherds of the Rouletted [11.21] and Black-and-red Wares.

IAR 1961-2.

Pitikayagulla, Dt Kurnool. Series I (Lower Palaeolithic [4.2]) tools.

IAR 1960-1.

Pittachcheri, Dt Thanjavur. Megalithic [4.17.9] site containing pyriform urns and associated pottery.

IAR 1955-6.

Playanattam, Dt Madurai. See VAIGAI RIVER.

IAI 1957-8.

Pochampad, Dt Adilabad. Excavation at the site on the Godavari revealed five Megalithic burials. One of them consisted of a single circle of closely planted untrimmed granite boulders 10-06 m in diameter. A 1.5 m deep pit seems to have been cut partly into the natural soil. In the s.-w. quadrant just beneath the ancient ground level the skeleton of a horse was exposed. Overlying the pottery in the central area were two skeletons, one each of a male and a female, placed in an extended position. The burials seem to be secondary. The grave good comprised the distinctive Megalithic pottery, viz. the Black-and-red Ware [11.15.3] and red and all-black wares, represented by such shapes as the dish-stand, pot, bowl, etc. Surface exploration yielded microliths (of unspecified nature).

IAI 1963-4; 1964-5; 1966-7.

Pochavaram, Polipaka, Dt Khammam. Early historical [4.18.10] site.

Madras Arch. Rep. 25 August 1902, p. 20.

Pochhera, Dt Birbhum. Tools of the Late Stone Age (Mesolithic [4.5]), black-and-red pottery (of unspecified nature), agate beads and fragments of crude glass bangles.

IAI 1965-6.

Podumbusikandarchavadi Dt Madurai. Megalithic [4.17.9] urn burials.

IAI 1957-8.

Poiya, Dt Agra. PGW [11.14] and NBPW [11.16] site on the left bank of the Yamuna near Agra.

IAI 1955-6; 1965-6.

Pokharna, Dt Bankura. Site identified with Puṣkaraṇa of a Gupta inscription on the s. bank of the Damodar yielding a terracotta toy cart, figure of a ram with stamped decoration revealing the Kushan style, sherds of NBPW [11.16], red-slipped ware, black ware and stamped sherd of polished black ware.

IAI 1965-6; 1966-7.

Pokla, Dt Ranchi. So-called Asura [14.4] burial site consisting of the remains of a graveyard marked by slabs of stone and a sepulchral stone pillar.

Roy, S.C., 1915, in *Jour. Bihar & Orissa Res. Soc.*, 1, pp. 237-8.

Polampalle, Dt Krishna. Megalithic [4.17.7] site with circles.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Polangi, Dt Rohtak. PGW [11.14] was found at Polangi-I and early historical material [4.18.1] at Polangi-II.

Jour. Haryana Studies in History & Culture, 3, 1, p. 5.

Polayampalle, Dt Dharmapuri. Megalithic [4.17.9] site.

IAI 1969-70.

Poli, Dt Hissar. Harappa [4.9] site.

Haryana Studies in History & Culture, 3, 1, p. 138.

Pondavakkam. See PONNDACUM.

Pondi, Dt Rewa. Five flat celts and 47 rings of copper

[4.11].

AI, 7, 1951, p. 38A.

Pondicherry, Pondicherry. Flake tools of chert and other kinds of silica with a conchoidal fracture. The whole assemblage is typical of the s. Indian Neolithic [4.6.10]. The collection may be classified as flakes, blades, baked blades, truncated blades, axe-blades and spheroid rubbers. The collection does not form part of the Tirunelveli *teri* [9.5] Mesolithic complex [4.5].

AI, 12, 1956, p. 19.

Pondugala, Dt Guntur. Series II (Middle Palaeolithic [4.3]) tools.

IAI 1961-2.

Ponmala, Dt Malappuram. Double-chambered rock-cut cave [4.17.10] yielding bowls, dishes and plates in Black-and-red Ware [11.15.3].

IAI 1970-1.

Ponnani, Dt Malappuram. Rock-cut caves [4.17.10] with Black-and-red Ware [11.15.3] and some rusted iron implements. At some sites in Taluka Ponnani Russet-coated Painted Ware [11.22] overlapping with the Megalithic Black-and-red Ware [11.15.3] was found.

IAI 1960-1; 1970-1.

Ponndavacum, Pondavakkam, Dt Chingleput. Lower Palaeolithic [4.2] site.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 172.

Ponr-ka-data, Dt Chhatarpur. Rock-shelter [13] with paintings mostly in red ochre and occasionally in yellow was found at the place in Tahsil Bijwar.

IAI 1965-6.

Ponwarka, Dt Saharanpur. PGW [11.14] site.

IAI 1966-7.

Poona. See PUNE.

Poondi, Dt Chingleput. Excavation revealed the following stratigraphy (from bottom upwards): (i) basal Sriperumbudur shale, (ii) lateritized shale; (iii) disconformity; (iv) sheet gravel yielding late Acheulian tools; (v) redeposited laterite; (vi) sheet-gravel containing Middle Stone Age tools; and (vii) surface sterile and sandy soil. See ATTIRAMBAKKAM.

IAI 1963-4; 1965-6.

Poothamkaira, Dt Quilon. Megalithic [4.17.10] cists and stone circles.

IAI 1960-1; 1961-2.

Poraiyur, Dt Tirunelveli. Megalithic [4.17.9] site.

ASI-AR 1902-3.

Porappukara, Dt Trichur. Megalithic [4.17.10] site.

IAI 1966-7.

Porattusseri, Dt Trichur. Megalithic [4.17.10] site.

IAI 1966-7.

Porda, Dt Kheda. Early historical [4.18.2] site.

IAI 1971-2.

Porearkoil, Dt S. Arcot. Megalithic [4.17.9] burials with pyriform urns.

IAI 1958-9.

Porkalam (10°40'; 76°4'), Dt Trichur, literally meaning a

battlefield, lying on the sloping laterite formation about 4 km to the n. of Kunnamkulam in Talapalli Taluka. The site, marked by the location of the Vedakad temple, the most sacred place of worship of the local priestly class, the Nambudris, shows various types of Megalithic monuments [4.17.10] like rock-cut caves, dolmens, port-holed cists within stone circles and urns within stone circles. The potentialities of the site were first brought to notice by a summary digging conducted by the State Archaeologist of the erstwhile Cochin Government. In the early part of 1948 an urn burial surrounded by a circle of dressed laterite blocks and covered by a granite capstone was systematically excavated by the writer on behalf of the ASI (AI, 8, 1952, pp. 3-16). While the laterite for the circle stones is locally available the granite must have been brought from the nearest neighbouring quarry over 1 km away.

The excavation revealed in the centre a cylindrical pit, on an average 92 cm in a conical section into the hard laterite rock to a depth of 23 cm. On the s.-e. side was noticed a rough step or shallow ramp, 24 to 25 cm in depth, presumably to assist in the arrangement of funerary furnishings.

At the bottom of this pit was placed a pyriform urn, with a truncated round base, 96 cm in height and 53 cm in diameter at the mouth and 84 cm at the bulge. Inside the urn, at its base, were deposited seven pots, three iron implements, including a tanged dagger (?) or spear-head, and 48 beads, including 41 of etched carnelian. The skeletal remains, which were presumably deposited in one of seven pots, possibly the centrally placed one with a lid, were found in a mess badly crushed below the pot and the supporting ring-stand. The beads belonged perhaps to two strings which were originally hung on the terracotta hooks provided immediately below the neck of the urn. Above the pots there was no filling. The urn was covered with a lid. The sides of the pit were packed with loose earth filling up to the level of the lid.

Overlying the lid was arranged the bulk of the pottery, a group of 18 pots. Above these the pit was filled up with loose gravelly earth to the ground level to form a low mound, over which rested the capstone.

The entire range of the pottery recovered from this burial is wheel-made, excepting the big pyriform urn and the lower portions of the four-legged vases. The larger portion of this pottery belongs to the well-defined class of Black-and-red Ware [11.15.3], the all-black ware being represented by six examples and the red ware by five, including the pyriform urn and its covering lid. Some of the pots were also found to bear graffiti [20.1]. In technique and fabric this Megalithic pottery resembles that from the Megalithic monuments in the other parts of the peninsula, the correspondence extending to some specific shapes as well, like the bowl, dish, ring-

stand and lid.

Among the 41 etched carnelian beads, nine designs are met with, some of which have a fairly wide distribution both in space and time, the most popular being the zigzag and horizontal or oblique lines enclosed within marginal lines. The occurrence of a cross design is noteworthy. From comparative study of these etched designs it would appear that the central point in the chronology of the beads at Porkalam is c. 1st century A.D. with a margin on the earlier side. No other evidence except that of indirect comparative study of other finds including the typology of burials is available for dating the urn burial.

—B.K. THAPAR

Potur. See PUTTUR¹.

Pungampalli, Dt Coimbatore. Megalithic [4.17.9] cairn circles.

IAR 1962-3.

Port Blair, Dt Andamans. Kitchen midden [14.11] of sub-Neolithic culture.

Holland, T.H., 1964, in *Records of Geological Survey of India*, 31, pp. 45, 107-8. Theobald, Jr., W., 1862, in *Jour. Asiatic Soc. Bengal*, 31, p. 326.

Potanda, Dt Birbhum. Site with sherds of black-and-red ware (of unspecified nature) and other pottery, a few microlithic flakes and four pointed-butt Neolithic [4.6.5] celts.

IAR 1964-5.

Pothalguda, Dt Medak. Microlithic (of unspecified nature) site.

IAR 1963-4.

Potla, Dt Bhilwara. Series III (Mesolithic [4.5]) tools.

IAR 1959-60.

Potluru¹, Dt Krishna. Sites with dolmens [4.17.7].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Potluru², Dt Prakasam. Middle [4.3] and Upper Palaeolithic [4.4] site.

Aiyappan, 1942, *Manley Collection of Stone Age Tools*, Mem. ASI, 68, pp. 8-9.

Potur, See PUTTUR.

Poula, Dt Ghazipur. Site with Black-slipped Ware [11.13] of RAJGHAT affinity.

IAR 1962-3.

Poygunibetta, Poyenibeta hill, Dt Nilgiri. Megalithic [4.17.9] sites with barrows.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Poyini, Dt N. Arcot. Megalithic [4.17.9] site.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Poyyamani, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 2, 1, p. 934.

Prabhagiripatnam, Dt Nellore. Lower [4.2] and Middle Palaeolithic [4.3] site in the Venkatagireru valley.

IAR 1965-6.

Prabhas Patan (Somnath), (20°53'; 70°24'), Dt Junagadh, situated about 3 km s.-e. of the present

Prabhas Patan

town, on the s.-w. coast of Saurashtra at the mouth of the Hiran near the port town of Veraval. It is represented by a group of five mounds collectively known as Nagar. It was excavated in 1956 by the Gujarat State Dept of Arch. and the M.S. Univ. of Baroda and the work was continued later by the Gujarat Dept of Archaeology. The site was subjected to large-scale excavations by the Deccan College Post-Graduate Res. Inst. in collaboration with the Gujarat State in 1972, 1976 and 1977. The excavations revealed the following sequence of cultures.

Pd I (c. 2000-1800 B.C.). Above the virgin soil was 1.50 m thick deposit of flood over which the first habitation took place. But the flood deposit also contained cultural material and it therefore appears that this habitation was located elsewhere in the adjoining area. The characteristic ceramic industry of this Pd is a coarse red/grey ware which is associated with a red-slipped ware and the black-and-red ware [11.6.1]. The red/grey pottery is represented by the basin with flaring sides and a flat bottom. The rim is decorated with incised patterns such as chevrons and oblique lines. The red-slipped ware is of fine fabric and is also highly burnished. Some of the vessels of this ware have parallel or oblique ribbings. The black-and-red ware has its exterior completely red and the interior completely black, a feature characteristic of the black-and-red ware from Lothal. However the shapes in this ware are only copies of those in the red/grey ware. Besides, there is a painted black-on-red pottery similar to the late Harappa [4.10] in Gujarat. The people used blade tools of chalcedony. Among the small finds mention should be made of segmented faience [16.6] beads and dentalium shells which also might have been used as beads. A charcoal sample from the flood deposit has given a very early date of 2410 ± 110 B.C. But the sample is likely to have been contaminated because of the presence of miliolite which may have inflated the date.

Pd II (c. 1800-1500 B.C.). This Pd is characterized by the Prabhas Ware [11.8]. The vessels in this Ware are of fine fabric and are treated with a pinkish or orange slip which in several cases has turned grey because of peculiar conditions of firing in the kiln. Over this are painted patterns in purple or dark-brown. The patterns are linear and geometric such as groups of vertical and oblique strokes, wavy lines, hatched triangles, lozenges, etc. Another noteworthy feature is that the design or ornament is set in panels or registers. The forms are mostly copied from the Harappa pottery [11.3] such as the dish-on-stand, jar with heavily beaded rim, stud-handled bowl, etc. But the most predominant type is a subspherical bowl with a featureless rim. Mention must also be made of a variety of beads including segmented

beads of faience, microbeads of steatite, etc. The remains of a house are rectangular on plan (3.80×2.45 m), built of large slabs of miliolite limestone which abounds in the region.

Pd III (c. 1500-1200 B.C.). The Prabhas Ware of the preceding Pd continues in this Pd, but the Lustrous Red Ware [11.9] is now also associated with it. The most important feature of this Pd is a structure complex built of miliolite in mud. It consists of small squarish rooms (1.50 m sq) and a few larger ones (3.50×1.50 m). In most of the larger and in a few of the smaller rooms have been noticed a set of three or four flat stones set in mud mortar to form a sort of platform, usually near the entrance. The structure, however, has not been completely exposed because of huge banyan trees on one side and large-scale disturbances on the other sides. The floor in the room is not well-made and plastered but is rammed hard; it is made of lumps of black clay. A careful examination of the walls shows that there is no trace of post-holes. This is indicative of the structure being roofless and exposed to the sky. Another factor which provides corroborative evidence is the height of the walls which is not more than 60 cm. In fact most of the walls have only one or two courses of stone. Only the c. walls running n.-s. is a little high (60 cm) and two more walls parallel to it are also equally high but only at one or two points. We do not know whether originally they were so high or they appear to be so because of deep digging in the area within for tracing the stone courses of the foundation. A close examination of the stratigraphy and a careful analysis of the artefacts recovered from within the structure suggests that it was not meant for residential purposes. Hearths, ash, bits of charcoal, or clods of burnt earth and charred grains or any such evidences bespeaking human habitation are totally absent and one can therefore be certain that it was public building. It has therefore been tentatively identified as a sort of warehouse on the basis of parallels in w. Asia (cf. Tepe Yahya).

The tool outfit of the Prabhas people is Chalcolithic [4.14] in character. They used blades/flakes of chalcedony and even imported a few ones of obsidian from w. Asia. Copper ore is available in the adjoining Dt Amreli. Beads are made of semiprecious stones such as chalcedony, carnelian, etc., and faience and steatite as well. Segmented beads of faience are quite common; they are identical with the Harappa specimens. A unique seal amulet [12.1] of steatite has also been found. It is engraved on both sides; on one side there are seven stylized deer and on the other five. Stylistically the specimen is no doubt related to the Harappa seals and is perhaps the only of its kind of the post-Harappa period. A gold ear ornament has also been recovered from the

late levels. It is floral-shaped and is provided with a loop at the back for suspension. It is certainly a token of the prosperity of the Prabhas people, who also used cubical chert weights exactly similar to those from Harappa sites [6.29].

Pd IV (c. 4th century to 1st century B.C.). The site was deserted by the late Prabhas people around 1200 B.C. and was reoccupied in 4th century B.C., the hiatus being stratigraphically represented by a weathered layer about 30 cm thick. The site seems to have been occupied again in the Mauryan period when a fortified citadel was built as the site. It was constructed of dressed stones set in mud mortar. It was over 1 m in width and had bastions at cardinal points. The principal ceramic industry of the period is the black-and-red ware.

Pd V (c. 1st century B.C. to 6th century A.D.). The Pd is represented only in certain parts of the site. The Red Polished Ware [11.23] is the distinguishing feature of the Pd. Roman contact is indicated by the find of a fragment of an amphora [11.19]. Besides a few terracottas in Gupta style have been found.

Dhavalikar, M.K., 1977, 'Sub-Indus cultures of c. and w. India' paper read at the Seminar on Indus Civilization—Problems and Issues, Simla; in *Purātattva*, 9 (in press). Nanavati, J.M., Mehta, R.N., & Chowdhury, S.N., 1971, *Somnath—1956*. Vadodara.—M.K. DHAVALIKAR

Prahladpur (25°26'; 83°27'), Dt Varanasi, on the right bank of the Ganga, about 12 km s.-e. of Dhanapur Police Station, with two blocks of mounds separated by a nullah and encompassing an area of 1400 × 400 m, the longer axis being along the river. This site has been known for a 9-15 m high sandstone monolithic pillar bearing an inscription of a chief Śisupāla in Gupta Characters. The pillar was removed from the site in 1853 and re-erected in the old Queen's College (now Sanskrit University), premises Varanasi. A small-scale excavation conducted by A.K. Narain and T.N. Roy on behalf of the Banaras Hindu Univ. in 1963 (*IAR* 1962-3, p. 41) brought to light a habitation deposit 6-20 m high with relics of a single culture divisible into three Sub-pds.

Sub-pd A (700 to 500 B.C.) representing a pre-NBPW phase is marked by three principal ceramic industries: the Black-slipped Ware [11.13]; the red-slipped ware; and the black-and-red Ware [11.6.3]. A kind of coarse red ware and plain grey ware also continues side by side. The inhabitants used bone points, discs, cones and beads of terracotta as also of agate and carnelian and were conversant with the use of iron right from the beginning.

Sub-pd B (500 to 160 B.C.) witnessed a fully developed phase of the NBPW [11.16]. Thus while the first three ceramic industries continue in less frequency, the pride of place is taken by the NBPW in various shades of colour. Besides the familiar black lustrous hue it has a good repertoire of brown, silvery, golden, chocolate, pinkish and red hues, though in limited quantities. The

other antiquities of the preceding Sub-pd continue in use but new additions included terracotta human and animal figurines, terracotta pestles [6.19], punch-marked coins [3.1] and ring-wells [14.15]. An increased prosperity is manifested by new types in beads of semiprecious stone as also in the variety of iron objects.

Sub-pd C (160 B.C. to the beginning of the Christian era) marks a decline in the NBPW culture. The ceramic industry as a whole suffers decline and the pottery shapes are now more utilitarian. Carinated *hāṇḍis* and pear-shaped vases (10A types of AHICCHATRA) are the common shapes in the red ware.

The chronology of the Sub-pds at Prahladpur is based on the stratigraphic position of the NBPW at this site and its chronological position elsewhere. This relative chronology is supported by a single ¹⁴C date of charcoal sample from the earliest deposits which reads 765 ± 50 B.C.

The limited digging at Prahladpur brings into focus the formative period of the NBPW culture in the middle Ganga valley. It highlights the fact that like the PGW [11.14] of the upper Ganga valley the Black-slipped Ware is the most crucial pottery of this region. This ware is found in abundance right from the first occupation of the site and NBPW is nothing but a quality culmination of the former. Another concomitant of the lowest levels of this culture is the black-and-red ware with a limited number of sherds painted in white. Both these features are witnessed at the excavation sites of RAJGHAT and AYODHYA as also at several explored sites of this region.

Narain A.K., & Roy, T.N., 1968, *Excavations at Prahladpur*, Varanasi.—P. SINGH

Prakash (21°30'; 74°21'), Dt Dhule, on the confluence of the rivers Tapti and Gomai in Shahada Taluka, the site located to the s.-e. of the present village, with its longer axis running along the Gomai. Explorations in the TAPTI VALLEY had indicated the potentialities of the site. With a view to ascertaining the succession of cultures at the site and to providing a relative time-scale for the region, an excavation was undertaken at this site by the writer on behalf of the ASI in 1955. (*AI*, 20 and 21, 1964 and 1965, pp. 5-167). The excavation exposed an over 17 m deep occupational deposit, belonging to four Pds with a break between the earlier two and a continuous sequence thereafter.

Pd I (c. 1700-1300 B.C.) is Chalcolithic [4.14.6] in its cultural content and is further divided into Sub-pds I A and I B, the former being characterized by the occurrence of blades and microliths, hammer-stones, a restricted use of copper or low-grade bronze and four ceramic industries, each distinct in kind and range: (i) pale-grey ware, often burnt black-and-grey and decorated with painted designs in a fugitive white pigment both on the outside and the inside but with a marked preference for

the latter; (ii) black-painted red pottery of the Malwa fabric [11.10], containing strains of the late Harappa [11.4] and Savalda [11.12] forms and fabrics; (iii) mottled grey ware showing incised and applied designs; and (iv) coarse burnished and other plain wares, distinguished by its burnished surface and occasionally an ochrous paint on the rim portion. The blade and microlithic industry, being the principal component of the Chalcolithic culture, is dominated by a blade complex. Amongst the miscellany of less abundant finds are beads of various materials, fragments of shell bangles, a painted terracotta toy cart wheel [16.19] and a painted terracotta bull.

Sub-pd I B is distinguished by the intrusion of two more ceramic industries, viz. the black-painted red pottery of the Jorwe fabric [11.11] and the Lustrous Red Ware [11.9]. The other industries and crafts of the previous Sub-pd continue throughout the occupation. Some of the pots of the white-painted black-and-grey ware, the Malwa Ware and the Jorwe Ware also bear graffiti [20.1], of which ten different marks have been recognized.

Pd II (c. 700-100 B.C. with a margin on the earlier side), following after a time-gap, heralds the Iron Age. Stone implements like blades and microliths are replaced by tools of iron. The use of copper also becomes more common, though remaining subordinate to that of iron. Three principal ceramic industries, each marked by innovation in pottery tradition, are current during this Pd: the Black-and-red Ware [11.15.3]; the NBPW [11.16]; and other plain wares. Of these the former two are of special chronological importance. The NBPW of which only ten sherds have been found seems to have reached the site only towards the close of the Pd, possibly in the wake of an organized Mauryan expansion in c. 3rd century B.C. The other finds of the Pd include: beads of various materials; bangles of shell and glass; terracotta caskets and hypothetical head-scratchers (boat-shaped hollow, semi-circular or parabolic objects, sometimes compartmented, and having a hole at the vertex); an ivory comb [8.3]; bone styli [20.5] and a perfume casket [18.2]; the familiar pulley-shaped ear ornament [10.3.3] of jasper and crystal; and two badly corroded and defaced punch-marked coins [3.1].

Pd III (Middle of the 2nd century B.C. to the end of the 6th century A.D.), which in its earlier levels overlaps with Pd II and in the later levels with Pd IV, does not introduce any revolutionary change. The characteristic ceramic industries of the preceding Pd go into disuse and are replaced by a non-descript poorly made red ware. From the mid-levels and upwards have also been found sherds of the Red Polished Ware [11.23] in the patent sprinkler form and Ksatrapa painted sherds, diversified by white and black bands on the shoulders. Among the other finds mention may be made of various objects of copper, iron and lead, noteworthy amongst which are a

shaft-hole axe of iron [6.2] and two bells [6.3] of copper; querns and mullers [6.19]; a decorated soapstone casket [18.2]; beads of various materials; shell bangles showing pleasing variety of carved decoration; two terracotta human figurines including one of *anka-dhatri* type [17.2]; bone styli [20.5] glass bangles and rings; and three coins, two of three tribal Ujjayini type of c. 1st century B.C. and one of doubtful attribution but generally ascribable to c. 7th century A.D. from the top level.

Pd IV (c. 6th century to the 11th century) is distinguished principally by the relative profusion of opaque glass bangles, including the polychrome type, and the use of two varieties of pottery, viz. the darkish-grey and the mica-dusted light-brown ware. Other noteworthy finds consist of shell bangles, a shaft-hole axe of iron, glass, and a small sandstone image of Gaṇeśa attributable to c. 8th-9th century A.D.

From a comparative study of the past flora and the present vegetation it may be concluded that the forest-cover of the region on the whole has remained more or less of the same type. Taking these factors into consideration, it would be reasonable to infer that the climate and rainfall in the Khandesh region have not changed to any appreciable extent during the past 3500 years or so.

—B.K. THAPAR

Pranahita valley. Abbevilio-Acheulian artefacts [4.2] in the lower pebble horizons, Middle Palaeolithic [4.3] tools in the middle horizons and Upper Palaeolithic [4.4] elements intermittent gravel lenses overlying the middle gravels.

Gururaja Rao, B.K., 1978, *Decade of Arch. Studies in s. India*, Dharwar, p. 48.

Prang. See SIND VALLEY.

Pratakota, Dt Kurnool. Megalithic Black-and-red Ware [11.15.3].

IAR 1972-3.

Pratappur¹, Dt Dhule. Late Stone Age (Mesolithic [4.5]) site.

IAR 1963-4.

Pratappur², (22°4'; 86°38'), Dt Mayurbhanj. The site on the river Burhabalang yielded Series I (Lower Palaeolithic [4.2]) tools. See KULIANA. Neoliths were also found.

IAR 1957-8; 1958-9.

Pratappur³, Dt Palamau. Rich microlithic (of unspecified nature) site. See MARVANIA.

IAR 1959-60.

Pravara Sangam. See PRAVARA VALLEY.

Pravara valley. The Pravara (19°30'; to 19°40'; 73°40' to 75°5'), the major s. tributary of the Godavari, rises in the e. slopes of the W. Ghats at an altitude of about 1050 m above mean sea level in Akola Taluka of Ahmadnagar Dt. The total length of the river is nearly 200 km. It generally maintains an e. course to a distance of about 175 km from the source up to NEVASA town and then suddenly takes a n.-e. turn to join the Godavari. The

major irregularity in the course of the river is marked by a waterfall of 60 m height in the source region near Randha village (19°32'; 73°47'). Besides this there are a number of small waterfalls and rapids in the first 30 km course of the river. Geologically the region is covered by Cretaceous-Eocene Deccan Trap basalts.

The Quaternary [9.8] deposits are well-exposed along the entire course of the river and are represented by bouldery, pebbly or sand-pebbly gravels and associated sands, silts and clays. The alluvium has attained a thickness of about 20 to 25 m with a lateral extent of about 2 to 3 m especially in the middle and lower reaches of the river. The valley displays some unusual geomorphic features such as the appearance of infilled basin and entrenched meandering course. The valley has an appearance of infilled basin between Akola (19°32'; 74°01') and Sangamner (19°32'; 74°13') and the width of this basin near Sangamner is about 20 km. The river shows an entrenched meandering course in its first 25 km course, thereby indicating an uplift and the rejuvenated nature of its course. These unusual geomorphic features suggest the effects of tectonic movement of epirogenic type in the region.

Pioneering work in the field of prehistoric archaeology in the Pravara basin was carried out by Sankalia between 1954 and 1960. He discovered the tools of the Middle Palaeolithic [4.3] industry in a distinct stratified context at NEVASA (19°34'; 74°54'). This industry was then referred as Series II as it was found stratigraphically succeeding Series I—the Lower Palaeolithic [4.2] industry. The term 'Nevasian' was also designated for this industry after the type site of Nevasa. Sankalia postulated two cycles of aggradation and erosion in the Pravara. The Lower and Middle Palaeolithic industries were equated with the first and second aggradational phases respectively. The aggradational and erosional phenomena were attributed to drier and wetter climatic conditions.

The Lower Palaeolithic tool kit from Nevasa consists of handaxes, cleavers, scrapers, choppers, hammerstones, etc. The tool types of the Middle Palaeolithic industry comprise scrapers, borers and points. An assemblage consisting of thick long blades and burins comparable with the Upper Palaeolithic [4.4] was also recovered from this site; this was then called Series III. The mammalian fossils found in the alluvial deposits in association with lithic industries at Nevasa are: *Bos namadicus*, *Bubalus palaeindicus*, *Elephas namadicus*, *Palaeoloxodon antiquus*, *Stegodon insignis*, *Batagur* sp., *Cervus* sp., *Hexaprotodon namadicus*, *Trionyx* sp. and *Crocodylus* sp.

Corvinus, 1968, brought to light an Acheulian site situated in Primary context representing a workshop-occupation centre 3 km downstream of Nevasa

town on the confluence of a small nullah called the Chirki with the Pravara on its right bank. Excavations conducted at this site by Corvinus, Pappu, Ansari and Murty showed the following stratigraphic sequence: (1) soil, (2) sandy pebbly gravel, 4 to 6 m; (3) rubble, 0.40 to 0.75 m; and (4) amygdaloidal basalt.

The rubble resting on the uneven surface of basalt is the horizon of the Lower Palaeolithic industry displaying Middle Acheulian [4.2] characters. This rubble has been derived from neighbouring highgrounds by colluvial process similar to that of 'debris flow' commonly observed in a semi-arid environment. The rubble has a widespread distribution and occurs at various heights ranging from 5 to 20 m from the present bed of the river. The artefacts recovered from this deposit are almost in a mint condition. The rubble is conformably overlain by a channel deposit consisting of a well-cemented sandy pebbly gravel. This gravel has given mainly tools of the Middle Palaeolithic industry both in rolled and unrolled condition and a few of Acheulian industry. The Acheulian man occupied the right bank of the Pravara which was then dominated by rubble spread and the river was flowing at lower depths than at present, the rubble forming the main source of the raw material necessary for the preparation of the artefacts. On geomorphological and sedimentological grounds the Acheulian horizon has been dated to the Late Pleistocene [9.8.2].

Some other important sites which have yielded lithic assemblages and mammalian fossils are: MAHENDURI (19°32'; 73°57'), AKOLA (19°32'; 74°01'), SANGAMNER (19°34'; 74°13'), DAVANGAON (19°32'; 74°36'), KHUPTI (19°32'; 74°52'), and PRAVARA SANGAM (19°38'; 75°01').

Ansari, Z.D., Murty, M.L.D., Pappu, R.S., 1977, in *Bull. Deccan College Res. Inst.*, 36, pp. 8-14. Ansari, Z.D., & Pappu, R.S., 1975, in *ibid.*, 35, pp. 1-6. Corvinus, G., 1968, in *Anthropos*, 63-64, pp. 921-40. Rajaguru, S.N., & Pappu, R.S., 1973, in *Bull. Deccan College Res. Inst.*, 31, pp. 360-8. Sankalia, H.D., 1956, in *AI*, 12, pp. 35-52. Tripathi, C., 1968, in *Records, Geological Survey of India*, 95, pp. 355-66.—R.V. JOSHI

Proddattur, Dt Cuddapah. Early, Middle (Lower Middle Palaeolithic [4.2, 3]) and Late Stone Age (Mesolithic [4.5]) tools.

IAR 1964-5.

Pseva. See CHAMBAL VALLEY, PASEWA.

Puddih, Dt Bankura. Microlithic (of unspecified nature).

IAR 1959-60.

Pudiyalmohda, Dt Chandrapur. Early (Lower Palaeolithic [4.2]) and Late Stone Age (Mesolithic [4.5]) site.

IAR 1970-1.

Pudukkottai, Dt Pudukkottai. An extensive mound showing traces of mud fortification. The ceramics included Megalithic Black-and-red Ware [11.15.3], Russet-coated Painted Ware [11.22] and all-black ware as also later wares represented by ill-fired coarse pot-

tery. It is also a Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 1, 1, pp. 515-8, IAR 1961-2.

Pudukudi, Dt Tirunelveli. Megalithic [4.17.9] site.

ASI—AR 1902-3.

Pudupeerkadavu, Dt Coimbatore. Megalithic cairn circles [4.17.9].

IAR 1962-3.

Pudur. See SRISAILAM.

Pujna, Dt Saharanpur. PGW [11.14] site.

IAR 1965-6.

Pukka-Kot, Dt Ballia. Black-and-red ware (of unspecified nature).

IAR 1963-4.

Pulal, Dt Chingleput. Megalithic [4.17.9] site.

AI, 22, 1966, p. 29.

Pulayakkal, Dt Trichur. Megalithic [4.17.10] site.

IAR 1966-7.

Pulicondah, Pallikondai, Dt N. Arcot. Megalithic [4.17.9] site. Walhouse, 1879, thinks that the monument is non-sepulchral.

Madras Jour. Literature & Science, 13, 1844, pp. 47-51; 22, 1861, pp. 205-11. Walhouse, 1879, in *Indian Antiquary*, 8, pp. 164-7.

Puliyur (Kil-puliyur), Dt Tirunelveli. Megalithic [4.17.9] site.

ASI—AR 1936-7, p. 71.

Pulkhal, Dt Chandrapur. Late Stone Age (Mesolithic [4.5]) site.

IAR 1970-1.

Pullur¹, Dt Chingleput. Lower Palaeolithic [4.2] site.

Sewell, R. 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Pullur², Dt Trichur. Megalithic [4.17.10] urn burials.

IAR 1965-6.

Pulvayal, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 1, 1, pp. 515-8.

Pumgame, Dt Hassan. Megalithic [4.17.8] site.

Seshadri, M., 1956, *Stone-using Cultures of Pre- & Proto-historic Mysore*, London, p. 61.

Pūmpūhār, Dt Thanjavur. See KĀVERIPUMPATTINAM.

Punaghat-kala, Dt E. Nimar. Microliths (of unspecified nature).

IAR 1959-60.

Punatgaon, Dt Ahmadnagar. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1955-6.

Pundi, Dt Coimbatore. Megalithic [4.17.9] site with dolmens and cairns.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Pundir, Dt Saharanpur. PGW [11.14] site.

IAR 1968-9.

Pune (18°30'; 74°54'), Dt Pune. Tools of Series I (Lower Palaeolithic [4.2]) were found on the left bank of the Mula-Mutha river near the Bund garden and several tools of Series II (Middle Palaeolithic [4.3]) a little upstream in the gravel. The gravels in the Deccan College premises produced Middle Palaeolithic tools including burins.

IAR 1956-7; 1957-8.

Pungani, Dt Dharmapuri. Megalithic [4.17.9] site with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Punkunnam, Dt Trichur. Megalithic [4.17.10] site with pyriform burial jars in dull-red ware. The contents included iron implements and a small quantity of bones.

IAR 1966-7.

Punnam, Dt Tiruchchirappalli. Megalithic Black-and-red Ware [11.15.3].

IAR 1963-4.

Punnol, Dt Cannanore. Megalithic rock-cut caves [4.17.10] with an anthropomorphic figure among the iron objects.

Raghavan, M.D., 1936, in *Dr Krishnaswami Aiyangar Commemoration Vol.*, Madras, pp. 384-5.

Pur¹, Dt Bhilwara. Series II (Mesolithic [4.5]) tools.

IAR 1959-60.

Pur², Dt Fatehpur. Black-slipped Ware [11.13] and coarse and slipped red ware.

IAR 1967-8.

Pura, Dt Meerut. PGW [11.14] was found on the right bank of the Hindon, 29 km w. of Meerut.

IAR 1958-9.

Puradageri, Dt Dharwar. Neolithic [4.6.9] and early historical [4.18.11] site with two rectangular brick structures, the bricks measuring 30×45×120 cm.

Jour. Karnataka Univ., 4, pp. 183-200. *Progress Rep. Karnataka Res. in Bombay State*, 1947-52, p. 22.

Puradkeri, Dt Dharwar. Neolithic [4.6.9]-Chalcolithic [4.14.8] site.

IAR 1965-6.

Puram, Dt Dharmapuri. Megalithic [4.6.10] site with dolmenoid cists and stone circles.

IAR 1967-8.

Puramakanahalli, Dt Kolar. Megalithic [4.17.8] site with stone circles.

Information from C. Krishnamurthy through A. Sundara, IAR 1971-2.

Purana Qila, Delhi (28°38'; 77°12'), the 'Old Fort' on the Yamuna in New Delhi, off Delhi-Mathura-Agra road, built by Humāyūn and with standing monuments built by Sher Shāh, situated on a mound on which stood the village Inderpat till the beginning of this century, identified with Indraprastha, the headquarters of the Pāṇḍavaś of *Mahābhārata* fame. It was explored by Cunningham (ASI—AR, 1, p. 135) and later on by others. An inscription of Bhoja of the Pratihāra dynasty (c. 836-85) was found here in 1913-4. In a trial excavation of 1954-5 conducted by B.B. Lal of the ASI sherds of the PGW (11.14) and NBPW [11.16] and remains of the Śuṅga-Kushan periods were found. (IAR 1954-5, p. 13). Between 1969-70 and 1972-3 the ASI conducted large-scale excavations here (IAR 1969-70, p. 4; 1970-1, p. 8; 1971-2, p. 7; 1972-3, p. 8) revealing remains of eight Pds, though neither the PGW nor anything associated with it

was found: Pd I, Mauryan (4th-3rd century B.C.); Pd II, Śuṅga (2nd-1st century B.C.); Pd III, Śaka-Kushan (1st-3rd century A.D.); Pd IV, Gupta (4th-6th century); Pd V, post-Gupta (7th-9th century); Pd VI, Rajput (10th-12th century); Pd VII, Sultanate (13th-15th century); and Pd VIII, Mughal (16th-19th century).

Pd I is represented by mud floors, houses of mud brick (25×20×6 cm) and wattle and daub structures, drains of baked brick, both rectangular (44×22×6 cm and 50×25×7 cm) and wedge-shaped (45×30×17×7 cm), the latter perhaps intended to be used originally for the construction of a well or some other circular structure. Another important feature of the Pd is the occurrence of terracotta ring-wells [14.15], 75 cm in diameter, and a series of hearths. The other finds include a fragment of a sculptured ring-stone associated with the mother goddess [12.6], terracotta human and animal figurines [17] including a house-rider wearing armour, a terracotta seal [3.2] reading *Seyāṅkarasa* and another reading *Svāti(?)rakhitasa*, a dish of the NBPW showing a stamped figure of an elephant on the inner base, small rings and disc of banded agate, an uninscribed cast coin [3.1] and a clay sealing bearing the symbols of arched hill, tree and a hollow cross. The ceramic industry is represented by the NBPW, grey ware, Black-slipped Ware [11.13] and associated red ware.

The structures of Pd II show three phases of which the first two are characterized by the use of the Delhi quartzite in mud mortar and the last one of mud brick (size 50×26×6 cm). In one case evidence of mud plaster also has been noticed. The floors are made of rammed earth, occasionally paved with mud brick. Among the notable finds mention may be made of a large number of terracotta plaques showing divinities, *mithunas* and a lute-player, a small spouted anthropomorphic pot, seals and sealings in Brāhmī script, semiprecious stone and terracotta beads and bone points. The NBPW and some of its associated types are continued in this Pd.

Pd III is represented by the remains of regularly built houses of baked brick. Sometimes mud brick has also been used. One of the houses has a flight of steps. Traces of a brick-paved floor have also been noticed inside a house. The brick sizes are 37×22×5, 38×23×5 and 37×27×5 cm. The important antiquities include votive tanks [12.11], terracotta figurines showing foreign and local influence and prepared out of single or double moulds, copper coins of the Kushans and Yaudheyas and a small ivory handle. The pottery includes sprinklers [11.23], stamped potsherds and other usual types in red ware.

Pd IV is marked by houses made of reused bricks of Pd III. An impressive house having three to four constructional phases is a notable structure with a rounded quooin, partition walls, steps and front veranda. The im-

portant finds of this Pd consist of some terracotta human figurines, a broken shell bangle, terracotta seals and sealings, a small damaged *mukha-linga* in Mathura sandstone and a few seals and sealings besides moulded pottery.

In Pd V the structural remains show the use of mud brick and reuse of earlier baked bricks. An interesting feature is the presence of various types of ovens, some resembling modern *tandūrs*. Among the noteworthy objects mention may be made of fragments of terracotta figurines and a fine but damaged stone sculpture. The pottery is mainly a red ware in which the knife-edged bowl is a distinctive type.

Pd VI is represented by a few structures of reused brick of earlier periods and of mud brick; in one case alternate courses of baked and mud brick are employed. In some structures rubble is also used. An impressive structure is a massive enclosure wall of rubble which has been exposed to a length of over 30 m. Other significant objects include copper coins of bull-and-horseman type [3.1], terracotta figurines in folk style, beads, a sherd with Nāgari inscription, a lipped jug containing bells, *kirikīṇis* and other objects of copper, high-necked jars resembling the *surāhī*, a few fragments of carved stone tablets and a small figure of Viṣṇu.

Pd VII is represented by houses of reused bricks built over the debris of the earlier period. Some houses are found to be built of partly dressed rubble. A significant feature is the occurrence of the medieval glazed ware. Coins of some Delhi sultans are also obtained from the associated strata.

Three to four structural phases have been noticed in the Mughal period. The remains of a stone-flagged court and an adjoining large brick structure with a 1.2 m thick wall and houses with lime-plastered floors and sunken basins are noteworthy, besides a *hammām* complex consisting of side rooms, an underground chamber with marks of burning and a semicircular projection. *Lakhauri* bricks and rubble in lime mortar are profusely used. The notable antiquities include fragments of terracotta tiles, sherds of glazed ware, Chinese porcelain, Celadon Ware [11.25], a paper-thin *de luxe* grey ware, pieces of glass bottles, a terracotta lamp-stand, a gold leaf, several copper coins, an ear ornament and a gold coin with a Nāgari legend reading *Sighaṇika*.

— M.C. JOSHI

Purandarpur, Dt Birbhum. Late Stone Age (Mesolithic [4.5]) site with scrapers, knives, awls, points, lunates, flakes, blades and cores.

IAR 1964-5; 1968-9.

Purani, Dt Mysore. Site with Neolithic [4.6.9] remains.

IAR 1960-1.

Purani Marmi, Dt Chittaurgarh. Site with black-and-red ware and microliths (of unspecified nature) as also black-

on-red painted sherds with various designs such as horizontal bands, cross-hatched diamonds enclosed by horizontal bands and dots between vertical lines. See DURIA.

IAR 1957-8.

Purani Partheri, Dt Jaipur. PGW [11.14] and associated wares.

IAR 1972-3.

Purani Rewari, Dt Jaipur. OCW [4.5] site.

IAR 1972-3.

Puranpur, Dt Saharanpur. OCW [11.5], PGW [11.14] and grey ware associated with NBPW [11.16].

IAR 1965-6.

Purawa Tarauha, Dt Banda. Neolithic [4.6.3] site.

IAR 1970-1.

Purmony, Dt Kozhikode. Circular rock-out cave [4.7.10] yielding dishes, bowls and four-legged jars in Black-and-red Ware [11.15.3].

IAR 1970-1.

Purna valley, Dt Surat. Mesolithic [4.5] tools were found near Amachak, Amaroli, Kavitha, Shekhapur, Kuva-dia, Kajli, Miyapur, Ranat, Bunari, Nani-Bahari, Andhatri, Golan, Goldha, Dadaria, Mahuva and Vagech.

IAR 1968-9.

Puruldiha, Dt Purulia. Microliths (of unspecified nature).

IAR 1959-60.

Pusalpadu, Dt Kurnool. Extensive Neolithic [4.6.8] site adjacent to Megalithic [4.17.7] burials. Stone mace-heads, polished stone axes, sherds of burnished grey and black-painted red wares, Megalithic Black-and-red Ware [11.15.3] and a number of steatite discular beads were found. See SINGANAPALLI.

IAR 1962-3; 1967-8.

Pushpattur, Dt Coimbatore. A Neolithic [4.6.10] celt was found at the site on the bank of the Amaravati.

IAR 1960-1.

Pusukpalli, Dt Chanda. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1961-2.

Puthantaruval. See SAWYERPURAM.

Puthupadi, Dt Kozhikode. Megalithic [4.17.10] site with urn burials.

Cammiade, L.A., in *Man*, 30, article 135.

Putkandoddi, Dt Raichur. Chalcolithic [4.14.8] site.

Jour. Geological Survey of Hyderabad, 2, 1, pp. 121-35.

Putli-ka-data, Dt Chhatarpur. Rock-shelter [13] with paintings mostly in red ochre and occasionally in yellow was found in Tahsil Bijwar.

IAR 1955-6.

Putli Karar, Dt Raisen. Rock-shelters [13] with Chalcolithic black-and-red ware sherds.

IAR 1966-7. *Arch. Congress & Seminar: 1972*, Kurukshetra, 1976.

Puttaipalle, Dt Cuddapah. Early [4.2], Middle [4.3] and Late Stone Age (Mesolithic [4.5]) tools.

IAR 1964-5.

Puttambur, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 1, 1, pp. 515-8.

Puttan Taruvai. See PUTHANTARUVAL.

Puttur¹, **Potur**, Dt Chingleput. Lower Palaeolithic [4.2] site on the Korttalayar.

Foot, R.B., *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 171.

Puttur², Dt S. Kanara. Megalithic [4.17.8] site with urn burial.

Jour. Karnataka Univ., 10, 1974, pp. 2-3.

Puttur³, Dt Tiruchchirappalli. Megalithic black-and-red Ware [11.15.3] and urns.

IAR 1963-4.

Q

Qawan, Dt Bulandshahr. Śūṅga-Kushan red ware.

IAR 1964-5.

Qila Mewi. See USMANPUR.

Qila Muhammadinagar, Dt Lucknow. NBPW [11.16] site.

IAR 1960-1.

Qila Rai Pithora (28°32'; 77°11'), Dt Delhi, its s. rampart cut by Delhi-Mehrauli road, believed to be the extension made by the Cāhamāna king Prthvirāja III (1179-92), also known as Rai Pithora, to the original fortress of LAL KOT built by Anangapāla of the Tomara dynasty. Part of the Qila near Hodre-ka-Bagh was excavated in 1957-8 by the writer on behalf of the ASI to examine the nature of the ramparts (*IAR 1957-8*, p. 25). The excavation touched the foundations of the rampart 4.88 m

below the present top of the rampart here. On either face of the 6.10 m wide rampart there is a stone wall 75 to 90 cm thick, and the core is filled with earth. The lower part of the rampart is built with stone rubble and the upper with rectangular cut stones. Inside the rampart substantial stone structures have been exposed, the earlier ones running parallel to the rampart with e.-w. orientation, while the later ones show an oblique n.-e. to s.-w. orientation. The houses are well-built and include floors and ovens.

Y.D. SHARMA

Quilandy, Dt Kozhikode. Megalithic [4.17.10] rock-cut caves with Black-and-red Ware [11.15.3].

IAR 1964-5.

R

Raba, Dt Visakhapatnam. Mesolithic [4.5] site.

Jour. Andhra Historical Res. Soc., 35, pp. 323-6.

Rachanpalli, Dt Gulbarga. Megalithic site [4.17.8] with stone circles.

Jour. Geological Survey of Hyderabad, 4, 1, pp. 85-9.

Rachalapadu. See BOGGERU VALLEY.

Racherla, Dt Kurnool. Black-slipped and red ware sherds of the early historical period.

IAR 1965-6.

Radiabindha, Dt Mayurbhanj. Neolithic [4.6.7] and microlithic (of unspecified nature) site.

IAR 1958-9.

Raduapur, Dt Datia. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAR 1971-2.

Ragalapuram, Dt Madurai. Megalithic [4.17.9] site with dolmens.

Sewell, R., 1882. *Antiquarian Remains in the Presidency of Madras*, Madras.

Raghavalum, Rajawala, Dt Bellary. Megalithic [4.17.8] site with chamber tombs.

Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 46-7.

Raghawapalli, Dt Kolar. Megalithic [4.17.8] site with stone circles and cists.

Information from C. Krishnamurthy through A. Sundara.

Ragigudda, Dt Bangalore. Megalithic [4.17.8] site.

Prajavani, 19 June 1976, p. 6.

Rahalvadar, Dt Bhavnagar. Early historical [4.18.2] site.

IAR 1971-2.

Rahat. See PURNA VALLEY.

Rahaun, Dt Ambala. BARA pottery of SANGHOL I B affiliation.

Arch. Congress & Seminar, 1972, Kurukshetra, 1976.

Rahegaon. See GODAVARI VALLEY.

Raheli, Dt Sagar. Palaeolithic [4.2] site.

IAR 1958-9.

Rahimabad, Dt Gurdaspur. Early historical [4.18.1] remains. See ACHAL-SAHER

IAR 1961-2.

Rahina, Dt Ambala. Harappa [4.9] site.

Arch. Congress & Seminar, 1972, Kurukshetra, 1976.

Rahuri, Dt Ahmadnagar. From the trenches of the spillway and the main dam of the Mula at Mula-Nagar fossil bones of *Bos namadicus* and the tusk of *Elephas* were collected *in situ* along with a few Middle Stone Age [4.3] tools.

IAR 1966-7.

Rahuri Budruk, Dt Ahmadnagar. Microliths (of unspecified nature).

IAR 1958-9.

Rahuri Khurd, Dt Ahmadnagar. Microliths (of unspecified nature).

IAR 1958-9.

Rai, Dt Muzzaffarnagar. Grey ware, Black-slipped Ware [11.13], Sunga-Kushan red ware and sherds of thick grey ware with graffiti [20.1] in Brāhmī script [20.4.2].

IAR 1963-4.

Raibar, Dt Hoshangabad. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3]) tools.

IAR 1961-2.

Raidrug, Dt Bellary. Pointed-butt polished stone axes [4.6.9].

ASI-AR 1930-4.

Raigad, Dt Dhule. Palaeolithic [4.2] factory site. (Same as following?)

Gururaja Rao, B.K., ed., *Decade of Arch. Studies in s. India*, Dharwar, p. 20.

Raigarh, Dt Dhule. Palaeolithic [4.2] tools were picked up at the foot of a hill. The tools were mostly on flakes of haematite and the collection consisted of a couple of bifacial handaxes on core and scrapers, tranchets, ovates, points, etc., on flakes. (Same as preceding?)

IAR 1958-9.

Raigir¹, Dt Gulbarga. Port-holed cists [4.17.8].

Jour. Hyderabad Arch. Soc., 1916.

Raigir², Dt Nalgonda. Early historical site [4.18.10] yielding the Black-and-red Ware and black polished and red polished wares.

Raipara, Dt Bharuch. Middle (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) sites.

IAR 1969-70.

Raipur¹, Dt Bijnor. PGW [11.14] site.

IAR 1959-60.

Raipur², Dt Bulandshahr. PGW [11.14] and plain grey ware.

IAR 1959-60.

Raipur³, Dt Saharanpur. NBPW [11.16] and medieval ware.

IAR 1964-5.

Raipura, Dt Bharuch. Late Stone Age (Mesolithic [4.5]) site.

IAR 1969-70.

Raipur-Hingna, Dt Nagpur. Megalithic [4.17.6] site with stone circles.

IAR 1970-1.

Raipur Surjan, Dt Rohtak. Rang Mahal [11.24] site.
Jour. Haryana Studies, 3, 1, p. 7.

Rairangpur, Dt Mayurbhanj. Series II (Middle Palaeolithic [4.3]) and microlithic (of unspecified nature) tools.

IAR 1957-8; 1958-9.

Rairh (26°20'; 76°10'), Dt Jaipur, in a valley surrounded by small hill ranges on the e., s. and w. spurs and isolated spurs on the n., where, following the accidental discovery of a hoard of 326 silver punch-marked coins [3.1], excavation was conducted by D.R. Sahni in 1938 and by K.N. Puri during 1938 to 1940. Of the three Pds identified in the excavation the lowest had only a few fragmentary jars and potsherds, the middle one a double-roomed dwelling and the section of a drain and the uppermost three small houses, a series of parallel walls and fragments of drains, including one of clay pipes, the size of the bricks being about 48×2.3×8 cm and pavements; evidently most of the houses were built of mud, of which no trace exists. Of the 18 ring-wells of the nature of soak-pits, two were filled with layers of inverted lotū-shaped jars.

The pottery ranging in date from the 3rd century B.C. to the 2nd century A.D. is sometimes decorated with rope and chain pattern and the mark of taurine. There are a few theriomorphic vessels in the form of monkeys. Stone and clay dabbers [16.11] and steatite vessels are known; fragment of a rim of polished Chunar sandstone is an import.

There are different types of mother goddess, hand-and mould-made [12.6], some of them in the typical Śuṅga style. Animal toys, including horse and elephant-riders are common.

Iron tools and implements—swords, lance-head and spearheads, daggers knives, arrowheads, sickles, axes and adzes,—a bronze needle, stone balls, hones and [16.2] and querns [6.19], bone spikes, shell, bronze and terracotta bangles, beads of diverse material, such as etched carnelian, clay, lead, bronze, glass and crystal, ear ornaments, clay skin-rubbers [18.4], a circular bronze mirror [18.5], ivory, and bone dice [6.7.1] and clay votive tanks [12.11] are the other important finds. Enormous quantities of iron slag [16.9.4] show that the site was a centre of ironsmithy.

Apart from the chance discovery of the punch-marked coin hoard mentioned above, four more boards of 99, 132, 535 and 1983 punch-marked coins respectively were found in the excavation. In addition uninscribed cast, Mitra and Mālava coins abound on the surface.

A Later exploration has brought to light microliths and a black-and-cream ware (*IAR 1958-9*).

Puri, K.N., ed., *Excavations at Rairh, Jaipur*.—A. GHOSH

Raisen, Dt Raisen. Lower Palaeolithic [4.2] factory site. Also rock-shelters [13].

IAR 1959-60; 1966-7.

Rait, Dt Kangra. Lower Palaeolithic [4.2] choppers in rolled condition.

IAR 1966-7.

Raja-Karna-ka-Qila (29°58'; 76°49'), Dt Kurukshetra, adjacent to the Kurukshetra University Campus and lying in the revenue jurisdiction of Mirzapur village, 3 km w.-s.-w. of Thanesar, the mound rising to a height ranging from 9 to 12 m from the surrounding field level. It was first surveyed by Cunningham (*ASI-AR*, 2, p. 220) and was later excavated by D.B. Spooner (*ASI-AR*, 1921-22; 1922-23). In the fifties Lal reported the discovery of the PGW [11.14] from the site (*AI*, 10 and 11, 1954 & 1955, pp. 141, 150, 151). Further excavation at the site was undertaken on a small scale by the Kurukshetra Univ. (*IAR 1970-1*, p. 15; *1971-2*, p. 23; *1972-3*, p. 12) along with MIRZAPUR. The excavation in the s. part of the mound, rising to a height of 9 m, provides the evidence of 11 structural phases ranging in date from c. 400 B.C. to c. A.D. 300. The accumulation broadly falls into two Pds which is also confirmed by the excavation in other parts of the mound. In addition the remains of the late medieval period have been brought to light on the n. and w. fringes of the mound.

The deposit of Pd I (c. 400-100 B.C.) is characterized by the occurrence of grey ware along with red ware. The grey ware is coarser than the PGW and is very rarely painted with simple bands on the rim. On this basis and that of other associated wares and finds the beginning of this Pd can be ascribed to c. 400 B.C. The housing activity of the period shows four phases of construction, the structures being made of mud or large-sized mud brick measuring 50 cm in length. The use of burnt bricks is also attested by the occurrence of brickbats. The other finds of the Pd include stone pestles and quern [6.19]; beads of terracotta and semiprecious stones; terracotta animal figurines, bangles and skin rubbers [18.4]; and bone points. Two identical terracotta sealings from the upper levels of the Pd depict four auspicious symbols—*svastika*, snake, nandipada and crescent.

The next Pd II, covers a span of about 400 years beginning from c. 100 B.C. The Pd can be subdivisible into two Sub-pds on the basis of the ceramics. The late Sub-pd is distinguished by the occurrence of the Red Polished Ware [11.23]. In all seven structural phases have been encountered in this Pd. Generally mud brick measuring 37 × 23 × 7 cm has been used in the construction of houses but in the upper levels burnt brick of the same size is seen. In the upper levels remains of hearths (*chūlhās*) have also been noticed. A room has a mud-brick pillar in its centre for supporting the rafter flanked by beams on either side. A hearth full of potsherds and

ashes and a few circular pits cut into a mud-brick platform have also been found. A potter's oven, later on used as refuse-pit with animal bones and broken pots, has been discovered. The pottery of the Pd, though mostly unpainted, is decorated with various stamped designs, such as *cakra*, *nandipada* and floral motifs. The other finds of the Pd include: early historical copper coins; ornaments comprising beads of semiprecious stones, shell and terracotta; shell bangles; terracotta objects such as human and animal figurines, toy-cart wheels [16.19], dabbers [16.11], blade-sharpeners etc.; a small rod and blade piece of copper; and a variety of household iron and stone objects. The outstanding finds are three clay sealings bearing legends in Brāhmī script of the early centuries of the Christian era.

On the n. fringe of the mound have been found remains of the late medieval period, Pd III, with the ruins of structures and a dry well made of *lakhaury* brick seen on the surface itself. Due to this additional deposit the n.-w. part of the mound rises to a height of about 12 m. This Pd is characterized by the use of *lakhaury* brick in the construction of structures and medieval glazed pottery. There are two parallel walls running e.-w. and a revetment on its outside, the inner wall made of clay lumps and measuring 10-10 m in width and the outer wall and the revetment constructed in *lakhaury* brick. The interior of these walls was filled with the earth dug from the adjacent part of the mound and over this filling were constructed *lakhaury*-brick houses. In order to retain the inner filling of earth walls of *lakhaury* brick were also constructed at places. Two such walls have been partially encountered in the excavated area. The whole complex seems to have formed a part of a late medieval fortification. An interesting structure is a *hauz* of *lakhaury* brick plastered with lime. Also belonging to this period is a house built of *lakhaury* brick along with a brick-paved lane.

U.V. SINGH

Raja-ki-Chauki, Dt Mirzapur. Microliths (of unspecified nature).

IAR 1962-3.

Rajakkad, Dt Idukki. Megalithic [4.17.10] site.

IAR 1972-3.

Rajakkalpatti, Dt Madurai. Megalithic [4.17.9] sites with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Rajalabanda, Dt Raichur. Chalcolithic [4.14.8] and Megalithic [4.17.8] site with remnant of an ash-mound [14.3] and cairn circles.

AR Hyderabad Dept of Arch., 1933-4. *Jour. Geological Survey of Hyderabad*, 3, 4, pp. 76-82. Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, p. 78.

Raja-baba-ki-Pahari, Dt Mirzapur. Microlithic cores, flakes and finished tools were found on the top of the

hillock situated on the right bank of the river Garal. See CHANDRAPRABHA VALLEY.

IAR 1961-2. Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad, p. 79.

Rajadera, Dt Ranchi. Tools of the Early (Lower Palaeolithic [4.2]) and Late Stone (Mesolithic [4.5]) Ages were found.

IAR 1965-6.

Rajagiri, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 1, pp. 515-8.

Rajalwada, Dt Bharuch. Middle Palaeolithic [4.3] and Mesolithic [4.5] site.

IAR 1968-9.

Rajampeta, Dt Krishna. Megalithic [4.17.7] site with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Rajanagaram, Dt Chingleput. Lower Palaeolithic [4.2] site.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Rajankolur¹, Dt Gulbarga. Chalcolithic [4.14.8] and Megalithic [4.17.8] site.

Paddayya, K., 1973, *Investigation into the Neolithic Culture of Shorapur Doab, s. India*, Leiden, p. 8. Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 54-5.

Rajankolur², Dt Raichur. Megalithic [4.17.8] habitation site.

IAR 1965-6.

Rajapalayam, Dt Chingleput. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3]) tools.

IAR 1963-4.

Rajapokhar, Dt Bhagalpur. Microlithic (of unspecified nature).

IAR 1963-4.

Rajapur. See GANGA VALLEY.

Raja Sirkap, Dt Faridkot. Pottery representing the dish and perforated jar, triangular terracotta cakes and steatite disc beads, all recalling the Harappa [4.9] tradition, at Raja Sirkap, 3 km to the s. of Faridkot, also known for its early historical material such as the Rang Mahal Ware [11.24].

IAR 1958-9. Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 122.

Rajavalliporambu, Dt Tirunelveli. Megalithic [4.17.9] site.

ASI—AR 1902-3.

Rajawala. See RAGHAVALUM.

Rajbaridanga, Dt Murshidabad, on the Bhagirathi, one of the series of mounds near Chiruti, a railway station on the Howrah-Farakka line, about 12 km s.-w. of Murshidabad, the findspot of many stone sculptures and coins, the mounds provisionally identified as Rakta-mrtikā monastery seen by Hiuen Tsang in the 7th century near the capital of king Śaśāṅka. Apart from many previous explorations one of the mounds, Raksha-

sidanga, was excavated in 1929-30 by K.N. Dikshit of the ASI who found Buddhist relics there (*ASI—AR 1929-30*, p. 143). The Dept of Arch., Univ. of Calcutta, extensively excavated Rajbadidanga in 1962 and onwards and brought to light structural remains, largely disturbed by brick-robbing, divisible into three Pds: Pd I, c. 2nd-3rd century to 4th-5th century; Pd II, c. 5th-6th to 9th-10th century, overlying a deposit of silt; and Pd III, 9th-10th to 12th-13th century. Of these Pd II is rich in cultural equipment and is distinguished by a large number of sealings [3.2], one class of which gives the name of Rakta-mrttikā-mahā-vihāra, thus confirming the identification of the ruins with the establishment of that name seen by Hiuen Tsang. While no complete plans are available, that the structures belong to a Buddhist establishment is obvious. The pottery of Pd I is relatively crude but that from Pd II is polished and fine. Other objects include terracotta figurines, handmade and moulded, handmade animal figurines coming from Pd I. Ornamental stucco mouldings including human heads come from Pd II. Bangles and rings of copper/bronze and an eight-spoked *cakra* on a floral pedestal of the same material, iron objects like nails, knives, a nut-cracker and a chisel and shell bangles constitute the other reported finds. A solid deposit of burnt wheat and rice in a granary is noteworthy.

The find of a fragmentary human skull with cut marks below the foundation of a wall of Pd II shows the occasional magico-religious practice of human sacrifice.

With the identification of Rajbadidanga with Rakta-mrttikā, Saśāṅka's Karnasuvarna has to be sought for not far away.

CHIRUTI has also proved to be a Chalcolithic site [4.14.4].

Das, S.R., 1968, *Rajbadidanga: 1962*, Calcutta; 1971, *Arch. Discoveries from Murshidabad*, Calcutta.—A. GHOSH

Rajdhana, Dt Saharanpur. OCW [11.5] site.

IAR 1964-5.

Rajdhani, Dt Gorakhpur. Black-and-red ware (of unspecified nature).

IAR 1963-4.

Rajendragram, Dt Shahdol. Middle Stone Age (Middle Palaeolithic [4.3] and Late Stone Age (Mesolithic [4.5]) tools.

IAR 1961-2.

Rajendram, Dt Thanjavur. Megalithic Black-and-red Ware [11.15.3].

IAR 1964-5.

Rajgad, Dt Ujjain. Site with Kayatha Ware [11.17]. (Same as following?)

Arch. Congress & Seminar, 1972, Kurukshetra, 1976.

Rajgarh, Dt Ujjain. Chalcolithic site. (Same as preceding?)

IAR 1971-2.

Rajghat¹, Dt Guna. Early (Lower Palaeolithic [4.2] and

Late Stone Age (Mesolithic [4.5]) tools were found on the Betwa.

IAR 1970-1.

Rajghat², Dt Jhansi. On the left bank of the Shahzad, a tributary of the Betwa, a Neolithic celt was picked up. An unfinished celt and a large number of dolerite pebbles might indicate a factory site.

IAR 1959-60.

Rajghat³, Dt Sidhi. Tools of Early and Middle Stone (Lower and Middle Palaeolithic [4.2, 3]) Ages.

IAR 1962-3.

Rajghat⁴ (25°4'; 83°1'), Dt Varanasi, on the n. outskirts of Varanasi city, near the confluence of the Ganga and Barna (Varunā), representing the ancient city of Vārānāsi, the capital of the kingdom of Kāśī, one of the 16 *mahā-janapadas* in Buddha's time. The antiquity of the city and its continuous history was not confirmed by any archaeological evidence till as late as 1940, when the mound was being despoiled for earth for the remodelling of the adjacent railway station. In the same year a trial excavation of the site was taken up by the ASI (Deva, 1940). The operation, besides revealing a temple hall supported on 12 pillars along with other brick structures, unearthed a store of black pottery now famous as the NBPW [11.16] and other antiquities including terracotta figurines but did not strike the natural soil. A sealing inscribed in Gupta characters with the legend *vārāṇasy-adhiṣṭhānādihikarāṇasya* confirmed that the mound of Rajghat represented ancient Vārānāsi. Much more extensive work was carried out here by A.K. Narain and his colleagues of the Banaras Hindu Univ. during 1960-7, revealing a continuous sequence of six Pds, from before the NBPW to medieval times, which should serve as an index for this region.

Pd I. Pd I, dated from c. 800-200 B.C. is divisible into three Sub-pds. Sub-pd I A was the formative period of the settlement, characterized by the black-and-red ware, [11.6.3], Black-slipped Ware [11.13] and slipped and unslipped red ware. The first two are sometimes painted with simple linear designs in white. Iron implements, tools of bone and large number of terracotta objects like pottery discs, both unperforated and with single perforation [6.7.3], wheels [16.19], balls, ear ornaments, skin-rubbers [18.4] and stoppers were the objects in use. Among stone objects we have balls of different sizes. Beads of terracotta, paste and bone have also been found. No structural remains of any kind have been noticed.

The introduction of the NBPW, both plain and painted, marks the beginning of Sub-pd B. The 2m thick deposit of the earlier Sub-pd was topped over by wooden planks, unmistakable traces of which have been noticed at several spots. A cross-section of the wooden remains, despite heavy decomposition, reveals that its thickness

was 5 cm. The smooth laying of the wooden planks up to a length of 34 m along the bank of the Ganga leads one to infer that the structure possibly served as a wooden platform during the first structural phase of this Sub-pd. As a result of the periodic rise in the level of the Ganga during floods, this wooden platform fell into disuse and floods became a source of constant danger to the city. It was at this stage (second structural phase) that a massive clay embankment was built as a measure against floods. Subsequently on the n. side of the settlement the inhabitants appear to have constructed a channel or ditch, connecting the Barna and the Ganga so that an effective barrier of water could also be formed on that side of the town. The embankment was built directly over the natural soil. Its vertical extant height is 5-10 m and basal width 19-80 m. The outer slope of the structure is pronounced while the inner one has lost its original contour due to constant weathering as also due to robbing of earth. A series of successive gravel-sandy deposits alternating with silt just over the outer toe of the embankment shows that the embankment was breached several times by floods on the river side. In the third structural phase its height was raised by the addition of a 1-10 m thick mud filling on the top. Associated with this structural phase is a *kachcha* drain passing close to a soak-pit. Remarkably well-preserved impressions of human feet have been noticed over the silted drain, indicating the movement of two persons in opposite directions. The presence of mud plaster with reed impressions in several pits suggests the existence of houses having reed walls plastered with mud.

The distinctive feature of Sub-pd C is the emergence of coarse grey ware and the deterioration in the quality of the NBPW. The red ware industry reveals certain new types which does not occur in the preceding Sub-pds. The following new shapes are observed: pear-shaped vase with variants; pan (*karāhi*) with applied loop handles on either side; carinated *hāṇḍi* with featureless rim; dish with sagger base; and shallow bowl with flat base. The black-and-red ware is almost negligible in these deposits. Several terracotta ring-wells [14.15] form the structural remains. The other objects of the preceding Sub-pd continue although their frequency is less and their types restricted. The use of mould for human shapes is evidenced for the first time. In some cases a moulded head joined to a handmade body shows an uncanny animal-like face with partly preserved bust in several cases. The Sub-pd is rich in the yield of several uninscribed copper cast coins [3.1], the earlier ones being from the mid-levels.

Pd II. In Pd II, covering the two centuries preceding the Christian era, coarse NBPW and coarse grey ware continue in diminishing quantities. A red ware stamped with leaf, floral and *tri-ratna* symbol and often with ap-

plied designs is the noteworthy feature of this Pd. The earliest specimen of *makara-mukha* occurs in the late levels of this Pd. Baked bricks are observed for the first time. Each family or a group of families had two rooms having one or two doorways, a vestibule, a domestic well, a bathing platform and an attached baked-brick drain. Sanitary arrangements were sometimes provided by placing soakage jars with perforated bottoms, while in other cases the houses had a soak-pit made of terracotta rings. Uninscribed copper cast coins and terracotta seals, some of them bearing names like *Revatimita* in the characters of the 2nd-1st centuries B.C., help to date this Pd.

Pd III. Dated from the beginning of the Christian era to the end of the 3rd century, this Pd is the most prosperous in the history of this site. The houses are all made of baked brick, the size of which averages into two groups, 40×25×5 cm and 39×29×5 cm. A considerable progress is also reflected in the art of clay modelling. The modelling technique of making figurines is a new feature. The elephant, the most favourite one, has been modelled with a graceful forehead, tusk and trunk and is decorated with stamped floral circles, leaves and punched circlelets. The female figurines are provided with profuse garments and ornaments like head-dress, necklaces and ear ornaments. The entire range of pottery is of red ware. Among the more important types mention may be made of: the bowl with vertical, sharpened, incurved and obliquely cut rim; lid having vase-shaped central depression; lid-cum-bowl; basin with rectangularly collared and splayed rim; *karāhi* with handles; and handled vase. Other distinctive forms are the bottle-necked vessel or sprinkler and spout. Seals and sealings and coins are plentiful. Nearly 400 seals and sealings, both finished and unfinished, palaeographically assignable to the 1st-3rd centuries A.D., have been recovered. One of them bearing the designs of a humped bull and inscribed with the word *Puṣkarana* can be placed somewhere in the second century. Amongst the other names found on the sealings *Harīṣeṇa* is the commonest. Die-struck coins [3.1] are reported for the first time. An Ayodhyā coin bearing the legend *Sivadatasā* and a Kauśāmbī coin with the legend *Navasā* also come from this Pd, the latter from the late level. The find of seals and sealings and coins in such large numbers bespeak the large volume of trade and commerce. Amongst the terracotta objects of daily use mention may be made of feeders, wheels, lids, dabbers [16.11], bullae [6.4], gamesmen [6.17.2], balls, miniature offering lamps, ear ornaments, rattles, skin-rubbers [18.4], cones and stoppers. Beads, pendants, amulets, rings and bangles form an interesting collection.

Pd IV. Dated from c. 300-700, the Pd is noted for a lesser number of but still important structures, the

noteworthy of them being two square *kundās* with wide-ning sides, a brick-edged platform associated with an apsidal structure, a kitchen with an oven and storage jars. An easily identifiable pottery is the Red Polished Ware [11.23] with the long-necked sprinkler as the main type. Sealings bearing respectively the inscriptions *Pāhikula* and *Govindasvāmī* and four gold coins of Candragupta, Kumāragupta I and Skandagupta and other tiny gold objects have been found in a pot. Among other objects is a terracotta human figurine of a deity showing elaborate arrangement for *abhiṣeka* and a unique red-ware handled bowl recovered from the inside of a room. The Pd is particularly rich in the yield of terracotta animal figurines which include those of the bull, elephant, dog, horse, lion, rhinoceros, tortoise, bear, etc. Terracotta human figurines show a remarkable growth of this art. No other age is able to stand comparison to the Pd in the richness of its products both in quality and quantity. The figurines are mostly mould-made and sometimes show traces of paint. Beautiful male and female heads show a variety of fashionable hair-dress.

Pd V (c. 700-1200). Notwithstanding the disturbance caused by extensive pits dug deliberately towards the end of the occupation, several brick walls, foundation pits of buildings and remains of several floorings have been exposed. The discovery of a large number of architectural fragments, *amalakas*, sculptures, a pedestal with *liṅga*, all lying at the same level, points to the destruction of some Brāhmanical structure. Among other finds mention may be made of several objects of terracotta, such as discs with nail-pattern design, a couch-shaped four-legged stool, daggers, toy-cart frames, wheels with hubs and beads of several semi-precious stones.

Some time in the 13th century the site was in occupation by a set of people whose cultural equipment stood in marked contrast with that of the preceding Pd. The pottery is now altogether different. The red ware is coarse to medium-grained and exclusively wheel-turned and has a dull-red colour. An occasional mixture of sand with the clay either at the luting point of the spout or with a superficial dusting over the entire body before firing gives the vessels some lustre. Amongst the outstanding shapes mention may be made of: the knife-edged bowl, lid either with knife-edged rim or hollow cylindrical knob; sturdy basin with beaked or nail-head rim; vase with either one- or two-mouthed plain spout and distinctive *dongā* with a lug handle. Apart from the ordinary red ware which persists throughout the occupation there is glazed ware confined mainly to the middle and late levels. The only forms represented in the glazed ware are the shallow bowl and plate provided with a ring-base. One specimen, however, appears to be a lid.

The human figurines show poor skill. Two coins, one of Suri king Sher Shāh, and the other of Akbar, come from the mid-level of this period. An East India Company coin has been recorded from the top deposit of this period.

Altekar, A.S. 1937, *History of Banaras, Varanasi* (for history), Deva, K., 1940, in *Annual Bibliography of Indian History & Indology*, Leiden, 3, pp. xli-li, Havell, E.B., 1905, *Benares, The Sacred City*, London, p. 4, Narain, A.K., & Roy, T.N., 1976, *Excavation at Rajghat*, 1. The Cuttings. Stratifications and Structures. Varanasi; 1977, *Excavations at Rajghat*, 2. The Pottery, Varanasi, Narain, A.K., & Singh, P., 1977, *Excavations at Rajghat*, 3. The Small Finds, Prakash, V., & Roy, T.N., 1965, in *Bull. U. P. Hist. Soc.*, 4, pp. 32-8.—T.N. ROY

Rajgir (25°1'; 85°30'), Dt Nalanda, 21 km s.-w. of Biharsharif, the Dt headquarters, a valley completely enclosed by hills which form the n. limits of the Gaya range flanking the s. of the Ganga plains, with two natural passes serving as gates between hills on the n. and s. Its physical position makes it a naturally fortified area and it was understandably the capital of Magadha, s. Bihar, from traditional days to about the 5th century B.C., when the capital was shifted to PĀTALIPUTRA. Its ancient names were Vasumatī, probably after Vasu the mythical son of Brahmā, Bārhadraṭhapura, after Brhadraṭha, the progenitor of a traditional dynasty, Girivraja, meaning the hill-girt valley, Kuśāgrapura, after Kuśāgra the successor of Brhadraṭha (though according to Hiuen Tsang it means the city of superior grass) and Rajagrha, the royal abode *par excellence*. It was the favourite resort of Buddha and Mahāvira and many are the spots in the valley associated with the life of the former. The names of the hills that surrounded it are given differently in ancient texts and their identifications with their modern counterparts—Vaibhāra, Vipula, Ratna, Chathā, Śāila, Udaya and Sonā—are not in all cases established beyond doubt. On the top of each hill are late medieval Jaina temples. Two groups of hot springs have added to the attraction of the place.

A continuous and bastioned dry-stone fortification wall with a circuit of about 40 km runs over the top of each hill and there are subsidiary partition walls, perhaps also defensive in character, cutting across the valley. Till the early 20s the fortification wall was regarded as the only extant structural remains of the pre-Mauryan period. In the widest part of the valley starting with the n. gate there is an inner fortification, 8 km in perimeter, of heaped-up earth and rubble, at places in ruins, but sometimes reaching a height of about 10 m. Three well marked gaps in the wall may represent ancient gates.

Outside the n. gate is New Rājagrha, believed to have been built by either Bimbisāra or Ajātaśatru, both contemporaries of Buddha. Here too there is a massive earthen wall, now largely missing, with a circuit of about 5 km, the s.-w. part of which is cut off to form a well-

defined quadrilateral citadel enclosed by a stone-faced wall, 4.5 to 5.5 m thick and at places 3 m high.

From the early days of archaeological investigations in India numerous were the explorations at Rajgir, but primarily to identify the ruins of places associated with Buddha. These explorations led to the spotting of the ruins of many a Buddhist religious edifice and place connected with him, chiefly based on the accounts left by the Chinese pilgrims. The work started with A. Cunningham and his assistants (*ASI—AR*, 1, 3 and 8), followed later by J. Marshall (*ASI—AR* 1905-6) and V.H. Jackson (*ibid.*, 1913-4). It cannot be said that all the identifications proposed by them have been altogether convincing and fresh identifications have now and then been proposed by others (Sen, 1918, 1924; Majumdar, 1949; Law, 1938).

Of the *stūpas* and associated structures that have been or are believed to have been identified mention may be made of: the *stūpa* of Aśoka to the w. of New Rājagṛha; the Veṇuvana complex between New Rājagṛha and hills comprising the Karaṇḍa tank and the *stūpas* and *vihāra* of Veṇuvana proper; and a *stūpa* ascribed to Ajātaśatru. Excavation at these has not produced any outstanding features; in fact there is hardly anything earlier than post-Gupta times. On the Vaibhāra, the hill to the w. of the n. gate of Old Rājagṛha, there is an excavated Jaina brick temple—the only early Jaina temple at Rajgir—with a central chamber facing e., surrounded by a court which is again flanked on all sides by rows of cells, all originally enshrining images of *tīrthaṅkars*, now mostly missing (R.P. Chanda in *ASI—AR* 1925-6). A Mahādeva temple near by, also of brick, has a *garbha-grha* with a flat roof, originally fronted by a *maṇḍapa* with granite pillars. A row of six caves (the number might have been originally seven) in a semicircular bend and a long artificial terrace in front on the n. scarp of the Vaibhāra might be the Saptaparni cave where the first Buddhist Council attended by 500 monks was held six months after the death of Buddha. (According to Marshall the Council was held in a specially built hall the ruins of which he identified at the foot of the Vaibhāra further to the w. But all sources refer to Saptaparni as a cave and not a hall.) At the s. foot of the Vaibhāra is a group of two rock-cut caves, one of which has fallen and the other has an inscription in characters of about the 4th century A.D., proclaiming that they were excavated by a Jaina monk and contained images of *tīrthaṅkaras*, which carved in low relief, still exist on the interior of the e. face of the wall. According to some, however, the architectural features of the cave betray an earlier date as they resemble those of the Mauryan caves of Barabar and Nagarjuni, not very far off (Saraswati, 1960, p. 503). The second cave, now fallen, was at some stage provided with a portico with a brick pavement and rafters fixed

into the outer rock surface.

Within the valley, about 800 m to the s. of the n. gate, is a unique structure—a hollow brick cylinder about 3 m in diameter and 1 m thick wall with stucco images of Brāhmanical divinities in Gupta tradition. The structure was the result of several rebuilds, with resultant rises in the levels marked by concrete floors outside to serve as circumambulation passages; in the course of one of the rebuilds a low door was provided to give access to the interior of the cylinder. Deeper excavation has shown that there are earlier brick walls unconnected with the cylinder. Within the stone compound wall that encloses the complex there are numerous brick altars, one of which held a Mathura sandstone sculpture carved on both sides, one of the inscriptions below a serpent-hooded couple mentioning Maṇi-nāga in Kushan characters. As the *Mahābhārata* and the Pāli texts mention a shrine of Maṇi-nāga or Maṇi-bhadra at Rajgir it is plausible to conjecture that this was the site of the shrine, later on altered to suit other requirements, including a now-demolished Jaina temple at the top. On and near one of the altars in the compound were scattered a large number of pottery jars, some more than 1 m high, with multiple spouts, many of them stuck on or rivetted into them. The spouts are variously shaped like ordinary short ones or like serpent hoods; goblins and animal figures (*ASI—AR* 1934-5). It is said that similar jars are still used in Bengal for the worship of the serpent goddess Manasā. (Recently F.R. Allchin in personal conversation suggested that the jars were used for purposes of distillation. If that were so, all evidence except the pots themselves has now been destroyed.) A Neolithic celt was found in the compound but it must be regarded as a stray find anciently brought from somewhere.

Further s., about 1 km away, there is a stone enclosure 60 m square, which is supposed to be the jail where Bimbisāra was kept imprisoned by his son Ajātaśatru and from where Bimbisāra could have a view of Buddha when the latter resided on the Gr̥dhṛakūṭa hill (below). Proceeding e. wards one comes to a site identified with the mango-grove donated by the physician Jivaka to Buddha. During 1953-5 D.R. Patil of the ASI excavated here (*IAR* 1953-4, p. 9; 1954-5, p. 16) and unearthed two large elliptical halls with subsidiary rooms within a compound wall, believed to represent Jivaka's monastery.

Not far from it a stone-paved road leads up the Chathā-giri where the Gr̥dhṛakūṭa cave, a favourite resort of Buddha, is located, though the identification has been doubted by some. The area is studded with Buddhist remains of the post-Gupta period.

Descending the hill and proceeding towards the s. gate of the valley one finds a large sheet of bed rock on

which they are deep ruts made of cart-wheels (gauge 1-4 m) [16.17] and large number of shell inscriptions, some of them very long.

In new Rājagṛha, the fort outside in n. gate of the valley, excavation in 1905-6 (*ASI-AR 1905-6*, p. 9) yielded remains of secular buildings in three levels. In one of the houses was 'granary made of earthen rings' (ring-wells? [14.15]) and a well of wedge-shaped brick. Also recovered ware: two clay tablets with legends in characters of the 2nd or 1st century B.C., a square copper punch-marked coin and six copper cast coins [3.1] as also medieval coins; some fragments of Buddhist sculptures; and a few terracotta seals bearing the Buddhist creed or symbols.

Considering the vastness of the site, its known antiquity and political and religious importance, all that has been said above about previous explorations is archaeologically jejune and unsatisfying unlinked with the present-day developments in Indian archaeology. However in 1950 the writer undertook on behalf of the ASI the scraping of a part of the 6 m high section cut by a stream at the foot of the Vaibhāra hill at the outskirts of the inner defences of Old Rājagṛha. Above the natural conglomerate are two deposits of riverine clay with occasional shapeless sherds overlain by a thick pebble bed. Real occupation starts at the site with the appearance of the NBPW [11.16] and black and grey wares of the same shapes as those of the NBPW. The earlier phase of the NBPW-bearing deposits has revealed a previously unknown type of burials. Half-oval pits with elliptical bottoms and short funnels still below have been found dug into the earth. The funnels are filled with clay (in two cases stone blocks are also placed), and the unbaked 'jars' thus improvised are filled with bone bits and ashes collected after cremation. In one case a thin slab of stone is used to seal the pit, the slab being again covered with a thin deposit of gravel. The NBPW and the associated wares continue till about the middle half of the height of the section but gradually become coarser. The upper layers show three successive road consolidations. The NBPW gives way to the red ware, some of them of shapes known from other sites to belong to the 2nd century B.C. to the beginning of the Christian era. Of the other objects are a terracotta animal figurine, coeval with the early phase of the NBPW, with circlets, punched on the body, a bird figurine with plumage indicated by incised lines and the torso of female figurine with drapery clinging to the body.

Occupation at this particular spot can be regarded to have started in the 5th century B.C. or somewhat earlier and continued till the 1st century A.D. But the results of this minor operation need not be taken to be the index of what can be expected all over the vast site.

A renewed excavation in New Rājagṛha was underta-

ken by R. Singh of the ASI (*IAR 1961-2*, p. 7; *1962-3*, p. 5), when a trench 66 m long and over 5 m wide, was laid across the s. defences near the s.-w. bastions. Carried down to a depth of 18 m below the extant top of the defences, the excavation has revealed three Pds with subdivisions in the latter two. The lowest is essentially non-occupational with only rare shapeless red-ware sherds; its top however has stone foundations and ashy deposits, with the NBPW and associated red ware, some pieces with black-painted linear designs, terracotta human figurines, a hoard of 14 punch-marked coins and fragment of a steatite amulet [12.1] with three circles each enclosing three symbols and three vertical lines on the reverse. The mud rampart of Pd II A rests over a deposit of burnt material which caused the destruction of Pd I. Built over a basal deposit of yellowish-brown mud the main core of the rampart has an extant height of 7.31 m retained on the s. side by a battered brick wall. The base of the rampart is available to a width of 40-53 m but on the n. side it is less. There is a moat on the outer side. The pottery in the core of the rampart is the same as in Pd I. In Pd II B a brick fortification was raised on the extant top of the mud rampart.

In the next Pd, III A, a deposit of earth and ashes, with the same pottery as of Pd II A, glass beads and iron objects, was laid on the debris of the brick fortification. In Pd III B a 33.5 m wide wall of brickbats, available to a height of 38 cm, was raised on the remains of Pd III A. The brick walls of the s.-w. bastion have revealed structures of three phases of construction. In the habitation area within the fort the same sequence of three Pds has been noticed.

The ^{14}C dates of samples from the pre-rampart deposit are 265 ± 105 and 260 ± 105 B.C.

As the bastioned stone fortification seen elsewhere on the s. and e. sides of the fort is not available at this spot a cutting was made across the s. defences near its s.-e. corner. Here also three Pds have been met with. Pd I, a 3 m thick deposit over the natural soil, has yielded the NBPW with a few rubble walls and a double row of storage jars in the upper layers. A remarkable find is a carved steatite plaque in three vertical compartments, each with a couple in archaic style. Over the debris is the mud rampart of Pd II which in turn supports the stone fortification of Pd III.

More recent exploration has brought to light Lower Palaeolithic [4.2] tools in gravel bed of the Banganga (*IAR 1967-8*). Also is reported a Neolithic [4.6] celt from somewhere in the valley (*IAR 1963-4*).

Beal, S., 1884, *Buddhist Records of the W. World*, London, 2. Cunningham, A., 1924, ed. Majumdar-Sastri, *Ancient Geography of India*, 1924. Kuraishi, M.H., & Ghosh, A., 1939 and subsequent eds., *Rajgir*, Delhi and New Delhi. Law, B.C., 1938, *Rājagṛha in Ancient Literature*, Mem. ASI, 58. Legge, J., 1886, *Travels of Fa-hien*, Oxford. Majumdar, R.C., 1949, in *Jour. Asiatic Soc. Bengal, Letters*, 15, pp.

65-79. Saraswati, S.K., 1960, in Majumdar, R.C., and Pusalker, A.D., ed., *Age of Imperial Unity*, Bombay. Sen, D.N., 1918, in *Jour. Bihar & Orissa Res. Soc.*, 4; 1924, *Rajgir & its Neighbourhood*, Patna. Stein, A., 1901, in *Indian Antiquary*, 30. Watters, T., 1905, *On Yuan Chwang's Travels*, London, 2.—A. GHOSH

Rajim, Dt Raipur. Pottery and microliths (both of unspecified nature).

IAR 1968-9.

Rajini Devi, Dt Hoshiarpur. Site yielding grey ware without painting, plain red and black-painted red wares of the early period [4.18.1], medieval pottery, terracotta figurines, broken sculptures and coins.

IAR 1969-70.

Rajkot¹, Dt Rajkot. Early historical [4.18.2] site.

IAR 1958-9.

Rajkot², Dt Rajkot. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAR 1970-1.

Rajnagar, Dt Chhatarpur. Middle (Middle Palaeolithic [4.2]) and Late Stone Age (Mesolithic [4.5]) tools.

IAR 1961-2.

Rajnota, Dt Jaipur. OCW [11.5], PGW [11.14], black-and-red ware and red ware site.

IAR 1972-3.

Rajoli, Dt Chanda. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1961-2.

Rajota, Dt Ujjain. A large mound 29 km w. of Ujjain with black-and-red, burnished red and black and late painted wares. On the bank of the Chambal, 5 km to the n. of Rajota, a Chalcolithic [4.14.5] site with painted ware was found.

IAR 1959-60.

Rajpalli, Dt Chanda. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1961-2.

Rajpipla, Dt Bhavnagar. Of the nine sites, Rajpipla-1 and -7 are Harappa [4.9] sites; Rajpipla-2 is of Middle Stone Age (Middle Palaeolithic [4.3]); Rajpipla-3 and -4 are early historical [4.18.2]; Rajpipla-6, -8 and -9 are Harappa and early historical; while Rajpipla-5 is of unspecified nature.

IAR 1971-2.

Rajpur, Dt Bastar. Middle Palaeolithic [4.3] site on the Narangi river.

Madhya Pradesh Sandesh, 13 June 1970, p. 10.

Rajpura¹, Dt Bharuch. Late Stone Age (Mesolithic [4.5]) site.

IAR 1965-6.

Rajpura², Dt Jullundur. Śunga-Kushan and medieval glazed ware.

IAR 1963-4.

Rajpuri, Dt Valsad. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAR 1964-5.

Rajpur Parsu, **Rajpur Khadar** (29°08'; 78°09').

Dt Bijnor, 2 km e. of the present bed of the Ganga, almost due e. of HASTINĀPURA. A hoard of 16 copper objects consisting of nine flat celts, six harpoons and one bar-celt was found here in about 1895-6 and is now deposited in the State Museum, Lucknow. (Smith, 1905). With a view to linking the copper objects with a cultural horizon yielding other associated antiquities, particularly pottery, B.B. Lal of the ASI located the findspot of the Copper Hoard [4.11] with the help of an octogenarian of the village in a mango garden on the periphery of a 2 m high small mound. He accordingly excavated five trenches here, one in the mango garden and four on the mound. He did not come across any copper object but an ill-fired, thick, ochrous ware came from the lower levels of the trenches. The ware compares well with the one obtained from BISAULI and HASTINĀPURA Pd I. Although there is no positive evidence that the Copper Hoard and this pottery are products of the same culture, it is believed that this is within the bounds of likelihood.

Lal, B.B., 1951, in *AI*, 7, pp. 24-7. Smith, V.A., 1905, in *Indian Antiquary*, 34, pp. 231, 234.—Y.D. SHARMA

Rajputan, Dt Amritsar. Remains of the early historical period [4.18.1] of c. 1st-2nd century A.D., including black-painted red ware and the Red Polished Ware [11.23].

IAR 1963-4.

Rajrappa, Dt Hazaribagh. Lower Palaeolithic [4.2] handaxes.

IAR 1960-1.

Rajua-Bahadurpur, Dt Gurdaspur. Early historical [4.18.1] remains. See ACHAL-SAHEB.

IAR 1961-2.

Rajulabanda, Dt Raichur. Ash-mound [14.3].

Sundara, A., 1971, in *Prof. Nilakanta Sastri Felicitation Vol.*, Madras.

Rajupur, Dt Saharanpur. Coarse grey and medieval glazed wares.

IAR 1963-4.

Rajur, Dt Dharwar. Megalithic [4.17.8] urn burial site.

IAR 1964-5.

Rajura, Dt Chanda. Microliths (of unspecified nature).

IAR 1960-1.

Rajvadi (73°27'; 18°5'), Dt Kolaba, 3 km n.-e. of MAHAD on the Savitri river. A cliff section on the right bank near the bridge shows two terraces. A few choppers [4.2] were obtained from the pebble bed of the higher terrace, while a few microliths (of unspecified nature) were picked up from the lateritic gravel.

Arch. Congress & Seminar, 1970, Nagpur, 1972.

Rakasgi, Dt Bijapur. Early historical [4.18.11] remains.

IAR 1961-2.

Rakasvada, Dt Dhule. Microliths associated with ochre-coloured pottery. See DHAMDAI.

IAR 1957-8.

Rakhamgeri, Dt Gulbarga. Megalithic alignment and

cairn circles [4.17.8], Megalithic habitation site and early historical [4.18.11] site.

IAR 1963-4. Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 81-6.

Rakha Mines. See DHALBHUM.

Rakhi Garhi, Rakhi Shahpur (29°16'; 76°10'), Dt Hisar, in the DRSADVATI (Chitang) valley. The extensive ruins spread over an area with a circumference of 2 km are partly covered by the twin villages of Rakhi Shahpur and Rakhi Khas, the latter popularly called Rakhi Garhi. The main group of mounds, preserved to a maximum height of 17 m, suggests a dichotomous plan of the Harappa pattern [4.9]. The lower w. mound reveals signs of a huge mud brick platform on the surface. The higher mound on the e. also pertains to the Harappa age. A smaller mound lying somewhat away from the main site in the n.-w. is characterized by the late SISWAL ceramic complex.

The relics and pottery from the site can be broadly classified into two periods, viz. KALIBANGAN I/SOTHI/SISWAL A [11.2] and Harappa [11.3]. In the former ware picked up from below the Harappa deposits in a rain gully and on the surface of the w. mound are represented all the six fabrics recognized in KALIBANGAN I including the bichrome painted (Fabric A), rusticated (Fabric B) and sturdy incised (Fabric D) wares. Besides, terracotta disc missiles, bangles and biconical beads are also found.

The Harappa settlement is marked by the extensive layout on a typical twin-mound plan. In the w. mound are exposed to a height of about 5 m the remnants of a huge mud or burnt-brick platform. In the e. mound can be noticed several structures of mud and burnt brick of the characteristic Harappa size (1:2:4 ratio) [14.6.1] and a street metalled with burnt clay nodules. The pottery comprises the classical Harappa shapes such as the storage jar, perforated jar, S-shaped vase, dish-on-stand, basin, goblet, beaker, vase, handled cup, etc. and painted designs such as *pipal* leaf and intersecting circles painted in black over red slip and incised cord- and nail-marks. The smaller finds include terracotta triangular cakes [6.27], sling balls, spindle whorls [6.25], a chess-board, a clay tablet inscribed with Indus letters [20.4.1], chert blades, steatite disc beads [10.1], faience beads and bangles [10.3.5], and carnelian and agate beads.

The late Harappa occupation is seemingly superficial and can be distinguished mainly by the ceramic shapes typical of MITATHAL II B or BARA pottery. These types include the storage-jar and dish-on-stand having an evolved form and vase with flanged rim, etc.

The extensive size and the strategic location of the site unmistakably point to the unique significance of the settlement, one of the largest Harappa settlement in present-day India, perhaps a provincial capital of the

culture, with a pre-Harappa and post-Harappa occupation.

Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutely-Yamuna Divide*, Kurukshetra, p. 124. —SURAJ BHAN **Rakshas Bhuvan.** See GODAVARI VALLEY.

Rail, Dt Meerut. Grey Ware and early historical [4.18.1] site.

IAR 1968-9.

Ramachandra hill, Dt Banda. A factory site yielding tools of the Early Stone (Lower Palaeolithic [4.2]) Age on the flat top of the hill about 400 m n. of Naraina town.

IAR 1961-2.

Ramachhajia, Dt Raisen. Rock-shelters with paintings [13].

IAR 1963-4.

Ramagiri, Dt Cuttack. Buddhist site with images and remnants of brick structures.

IAR 1959-60.

Ramagundam, Dt Karimnagar. Mesolithic [4.5] site.

Gururaja Rao, B.K., ed., 1978, *Decade of Arch. Studies in s. India*, Dharwar, p. 49.

Ramaiahnadinne, Dt Kolar. Megalithic [4.17.8] site with stone circles and cists.

Information from C. Krishnamurthy through A. Sundara.

Ramanagar, Dt Sidhi. Tools of the Early and Middle Stone (Lower and Middle Palaeolithic [4.2, 3]) Ages.

IAR 1962-3.

Ramana-ki-tadi, -tandi, Dt Varanasi. Early historical [4.18.1] site. See CHANDRAPRABHA VALLEY.

IAR 1962-3.

Ramana-Yakanahalli, Dt Kolar. Megalithic [4.17.8] stone circles.

IAR 1970-1.

Ramapura¹, Dt Kolar. Megalithic site.

Information from C. Krishnamurthy through A. Sundara.

Ramapura², Dt Mysore. Megalithic [4.17.8] habitation site.

IAR 1963-4.

Ramapuradinne, Dt Kolar. Megalithic [4.17.8] stone circles.

IAR 1970-1.

Ramapuram, Dt Kurnool. Site with painted pottery and Neolithic implements. See SINGANAPALLI.

IAR 1967-8.

Ramasagara, Dt Kolar. Megalithic [4.17.8] habitation site with Black-and-red Ware [11.15.3] and red ware.

IAR 1971-2; 1972-3.

Ramaswami Kanive, Dt Coorg. Large Megalithic [4.17.8] site with cists and pit circles.

Proc. Asiatic Soc. Bengal, 1869, pp. 54-9.

Ramatirtha, Dt Dharwar. Early historical [4.18.11] site.

Progress of Kannada Res. in Bombay State, 1947-52, p. 22.

Ramatirtham, Dt Visakhapatnam. To the n. of the village at a distance of about 12 km to the n.-e. of Visakhapatnam rises a range of precipitous hills chiefly consisting of bare solid rock. One of them, known as the Gurubhaktakonda, has on its side the extensive ruins of

a Buddhist monastery on a wide ledge situated at a height of over 150 m. At the w. end of this monastery are the foundations of a large *stupa* by a tank. To the e. of the *stupa* is a *caitya*.

ASI—AR 1910-11.

Ramathirthampaya, Dt Nalgonda. Middle Palaeolithic [4.3] and Mesolithic [4.5] site.

Sankalia, H.D., 1974, *Prehistory & Protohistory of India & Pakistan*, Poona, p. 174.

Ramayapatnam, Dt Prakasam. Lower [4.2] and Middle Palaeolithic [4.3] site.

Aiyappan, A., 1942, *Manley Collection of Stone Age Tools*, Mem. ASI, 68, pp. 8-9.

Ramba, Dt Karnal. Late Harappa [4.10] material was found at Ramba-1 and -2. See YAMUNA VALLEY.

Suraj Bhan, 1975, *Excavation at Mitathal & other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 125.

Rambhagiri, Dt Garo Hills. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAR 1970-1.

Rambhas, Dt Surat. Early, Middle (Lower, Middle Palaeolithic [4.2, 3]) and Late Stone Age (Mesolithic [4.5]) sites.

IAR 1967-8.

Rambhau, Dt Kutch. Microlithic site in Bhachau Taluka yielding a few fluted cores [16.15.3].

IAR 1955-6.

Ramdurg hill, Dt Bellary. Neolithic [4.6.9] site.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, pp. 77-8.

Ramenahalli, Dt Dharmapuri. Megalithic [4.17.9] cairn circles.

IAR 1970-1.

Rameswaram, Dt Ramanathapuram. Mesolithic [4.5] site.

IAR 1968-9.

Ramgad, Dt W. Nimar. Pebble tools [4.2] were found on the n. bank of NARMADA.

IAR 1968-9.

Ramgarh¹, Dt Allahabad. Middle Stone Age (Mesolithic [4.5]) site.

Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad, p. 37.

Ramgarh², Dt Hazaribagh. Early Stone Age (Lower Palaeolithic [4.2]) tools were found along the river Damodar.

IAR 1964-5.

Ramgarh Pahar, Dt Mirzapur. Middle [4.3] and Upper Palaeolithic [4.4] site yielding blades, points, scrapers and burins.

IAR 1970-1.

Ramgarhwa, Dt Allahabad. Painted rock-shelter [13].

Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad, pp. 37, 54.

Ramgaria, Dt Ganganagar. Late Rang Mahal [11.24] site in the SARASVATĪ VALLEY.

Unpublished.

Ramjalra, Dt Jaipur. [11.5] and PGW [11.14] site.

IAR 1972-3.

Ramjipur, Dt E. Nimar. Microliths (of unspecified nature). (Same as following?)

IAR 1960-1; 1961-2.

Ramjipura, Dt E. Nimar. Copper celt [4.11] with rounded butt-end and almost parallel sides. (Same as preceding?)

IAR 1961-2. *Bull. Deccan College Res. Inst.*, 1967.

Ramkera, Dt Saharanpur. Early historical [4.18.1] site.

IAR 1970-1.

Ram-Khiria, Dt Jabalpur. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1963-4.

Ramkishanpur, Dt Tonk. Non-Megalithic black-and-red ware [11.6.2].

IAR 1958-9.

Ramkutia, Dt Dhule. Microliths (of unspecified nature).

IAR 1958-9.

Ramla, Dt Keonjhar. Tools of Series I (Lower Palaeolithic [4.2]) were found comprising of bifaces—handaxes, cleavers, and scrapers—and choppers and chopping tools of almost all types showing different techniques of manufacture and stages of technical development. Tools of Series II (Middle Palaeolithic [4.3]) included points, scrapers, borers, burins, blades, cores and flakes. The site also yielded polished stone celts [4.6.7].

IAR 1958-9.

Ramlechi, Dt Junagadh. Red Polished Ware [11.23].

Ramnagar¹, Dt Bareilly. See AHICCHATRĀ.

Ramnagar², Dt Sidhi. Lower and Middle Palaeolithic [4.2, 3] site.

IAR 1962-3.

Ramnod, Dt Rajkot. Microlithic (of unspecified nature) site.

IAR 1958-9.

Ramod, Dt Rajkot. Red Polished Ware [11.23].

IAR 1957-8.

Rampalli, Dt Visakhapatnam. Mesolithic [4.5] site.

Jour. Andhra Hist. Res. Soc., 35, pp. 323-6.

Rampar Vekara-no-Timbo, Dt Kutch. Harappa [4.9] site.

IAR 1967-8.

Rampara (Old), Dt Bhavnagar. Red Polished Ware [11.23] site in the Ghelo valley.

IAR 1960-1.

Rampur¹, Dt Ahmadnagar. Series II (Middle Palaeolithic [4.3]) tools and microliths of Chalcolithic [4.14.6] assemblage.

IAR 1959-60.

Rampur², Dt Gurdaspur. Early historical [4.18.1] remains. See ACHAL-SAHEB.

IAR 1961-2.

Rampur³, Dt Kalahandi. Microliths (of unspecified nature).

IAR 1963-4.

Rampur⁴, Dt Muzaffarnagar. PGW [11.14], grey ware and medieval glazed ware, terracotta animal figurine and *ghata*-shaped bead.

IAR 1963-4.

Rampur⁵, Dt Sidhi. Tools of the Early and Middle Stone (Lower and Middle Palaeolithic [4.2, 3]) Ages.

IAR 1962-3.

Rampur⁶, Dt Solan. Lower Palaeolithic [4.2] site in the SIRSA VALLEY.

Mohapatra, G.C., 1966, in *Bull. Deccan College Res. Inst.*, p. 224.

Rampura¹, Dt Banas-Kantha. Microliths comprising fluted cores, points and blades were collected from the section and bed of the Banas.

IAR 1958-9.

Rampura², Dt Ganganagar. Three sites in the SARASVATI VALLEY, all with Rang Mahal Ware [11.24]. In addition Rampura-1 had shell bangles and -2 coarse grey ware and a shell bead.

Unpublished.

Rampura³, Dt Indore. Lower Palaeolithic [4.2] site.

IAR 1970-1.

Rampura⁴, Dt Mandasaur. Early Stone Age (Lower Palaeolithic [4.2]) site on the Smashan nullah yielding unifacial and bifacial pebble tools of large size.

IAR 1969-70.

Rampura⁵, Dt Mysore. Neolithic [4.6.9] stone axes and Megalithic [4.17.8] cist burials.

IAR 1961-2.

Rampuri Kalan, Dt Jabalpur. Conch-shells were found embedded in conglomerate in association with Series I and II (Lower and Middle Palaeolithic [4.2, 3]) tools.

IAR 1958-9.

Rampurva, Dt W. Champaran. Two pillars of Aśoka, one of them inscribed, were excavated in 1907.

ASI-AR, 16, p. 110. ASI-AR 1907-8.

Ramsaran-Majra, Dt Ambala. PGW [11.14] site.

IAR 1964-5. Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 123.

Ramsinghpur Tibba, Dt Ganganagar. Site in the SARASVATI VALLEY with Rang Mahal [4.24] Ware.

Unpublished.

Ramtola, Dt Bhandara. Site with sherds of the Red Polished Ware [11.23] and stone plaques of the mother goddess carved in low relief.

IAR 1969-70.

Ranala, Dt Dhule. Microliths (of unspecified nature). See KAN VALLEY.

IAR 1961-2.

Ranala-Khurd, Dt Dhule. Open-air camp site with large irregular as well as fluted cores, blades, scrapers, points, etc.

IAR 1960-1. Gururaja Rao, B.K., 1978, ed., *Decade of Arch. Studies in s. India*, Dharwar, p. 20.

Ranawao, Dt Junagadh. Red Polished Ware [11.23].

IAR 1957-8.

Randalio (21°49'; 71°03'), Dt Jamnagar. Late Harappa

[4.10] site corresponding to RANGPUR II B.

AI, 18 & 19, 1962 & 1963, p. 206.

Randaliyo, Dt Rajkot. Harappa [4.9] site near Randal Dadwa characterized by the convex-sided bowl, handled bowl, dish with flared rim, dish-on-stand, square-rimmed jar and perforated jar. Both red and buff wares were present. The painted designs consisted of roundels, wavy lines, hatched triangles, intersecting loops, leaves, etc. The site was also found to contain a cemetery. One of the graves was excavated and an extended skeleton, its head supported on a dressed stone, exposed. Fragments of the Harappa bowl and dish were recovered from near skeleton.

IAR 1958-9.

Rangamati¹, Dt Murshidabad. Excavation in 1928-29 brought to light the remains of structures of at least three periods, the lowest of which appeared to be a Buddhist establishment of the 6th-7th century. The site was identified with Karpasuvārṇa. (See RAJBADIDANGA).

ASI-AR 1928-9.

Rangamati², Dt Purulia. Microliths (of unspecified nature).

IAR 1959-60.

Rangamati³, Dt Midnapur. Quartzite pebble tools (Lower palaeolithic? [4.2]).

IAR 1962-3.

Ranganathapuram, Dt Mysore. Lower Palaeolithic [4.2] site.

Seshadri M., 1956, *Stone-using Cultures of Pre- & Proto-historic Mysore*, London, p. 15.

Rangapur, Dt Karimnagar. Mesolithic [4.5] site at the foot-hills.

Gururaja Rao, B.K., ed., 1978, *Decade of Arch. Studies in s. India*, Dharwar, p. 49.

Rangapuram¹, Dt Chingleput. Early (Lower Palaeolithic [4.2]) and Late Stone Age (Mesolithic [4.5]) site.

IAR 1964-5.

Rangapuram², Dt Kurnool. Mesolithic [4.5] site.

IAR 1970-1.

Rangasamudram, Dt Nellore. Lower [4.2] and Middle Palaeolithic [4.3] site in the Pennar valley.

IAR 1965-6.

Rangel, Dt Saharanpur. OCW [11.5] site.

IAR 1967-8.

Ranghra, Dt Jullundur. Late historical [4.18.1] mound yielding the knife-edged bowl, shallow dish-cum-bowl, knobbed lid, deep basin and vase in red ware.

IAR 1972-3.

Rangigir, Dt Garo Hills. Neolithic [4.6.6] site with stone axes, crudely shouldered axes and near-cylindrical chisels.

IAR 1965-6.

Rang Mahal¹ (29°21'; 73°57'), Dt Ganganagar, located on the dry bed of the Ghaggar (SARASVATI), 2 km n. of Suratgarh. The typical and widespread ceramic industry

represented here forms a distinct cultural trait; hence the terms 'Rang Mahal Ware' [11.24] and 'Rang Mahal culture'. Apart from previous explorations the site was excavated by the Swedish Archaeological Expedition to India during 1952-4 under Hanna Rydh.

The first settlement was laid on the alluvial around A.D. 250 as 'the coins found in the excavations at Rang Mahal show that the site was mainly occupied during the reign of Kaniska III.' All the identifiable coins were minted either by Kaniska III or the Murundas, the only exceptions being three coins of Kaniska I, Huviska and Vāsudeva, which might have continued in use during the rule of Kaniska III. This date tallies with a seal which on palaeographical grounds may be dated c. A.D. 300. The upper level of the culture on the basis of ^{14}C determination has been dated to A.D. 548 (1480 ± 70 B.C., half-life value not specified). Drying up of the river caused the evacuation of the site, as of other sites in the river valley.

The excavation has revealed eight structural phases. The structures were built of mud brick varying in size from 32 to 36 cm in length, 22 to 25 cm in width and 6 to 8 cm in thickness, the normal size being $32 \times 23 \times 7$ cm. The bricks were laid in the English bond system, i.e. in alternate courses of headers and stretchers. The floors were paved with mud brick. The houses were 'somewhat irregular rectangular constructions' laid with a n.-s. orientation. The structures are so much disturbed that no elaborate house plan or town plan is available.

The distinctive pottery of the site is wheel-made ware, reddish or pinkish in colour, seldom yellowish. There are two dominant wares, viz. coarse red ware and fine or moulded ware. The moulded types were first thrown on the wheel and later pressed into mould. The types of the coarse red ware are the globular or oval jar and *hāṇḍī* with pronounced rims. Externally below the neck the vases are rusticated showing wavy ribs. In some cases the shoulder and the neck are painted in black pigment on a red polished surface. The other types include the spouted vase of medium size, sprinkler with or without spouts, cooking vessel like *hāṇḍī* with one or two body carinations, sometimes with the bottom rusticated by pinching, storage jar, beaker with or without handle, bowl of different varieties with obliquely cut inturned rim, bowl with collared rim, dish and small plate, lamp [6.11], incense-burner [12.2], flask-shaped jar and perforated vessel. A few carinated *hāṇḍīs* have textile marks on the body. Moulded pottery is represented by the bowl and miniature basin.

The decorations on the pottery are applied and incised patterns and paintings. The applied designs consist of wavy bands of ribbing, finger-tip or thumb impressions and rippled hand-marks. The painted patterns are mainly executed in black, pinkish or rarely purple pigment over a red polished or burnished background. The

paintings comprise wavy lines, bands of zigzags, thick parallel lines, faunal and geometrical designs, conventional leaf patterns, birds, snakes, etc. The ceramics of Rang Mahal is distinguished by its homogeneity as also by a lavishness of painted designs. The fabric is well-fired though sherds with grey core are not wanting.

Twelve terracotta plaques in early Gupta style not unaffected by Gandhāra tradition, representing mythological and secular scenes, e.g., Kṛṣṇa uplifting mount Govardhana and couples in various attitudes, constitute a significant discovery. Tessitori who discovered them says: 'A general and very characteristic feature of all these reliefs is the classical treatment of the drapery and of the hair, which at once betrays the influence of the Gandhāra school. The men are represented bare-headed and beardless, with naked busts except for a collar-like ornament round their necks and a sort of narrow scarf thrown over one or both their shoulders. The females are represented variously but mostly with naked or half-naked busts, only partially covered by a scarf hanging down from head down the back and gathered up over the arms, and partly Indian and partly classical ornaments' (ASI—AR 1917-18, pp. 22-3). The bodice worn by women with short sleeves and armour-like decoration bespeaks Roman influence.

The cultural assemblage includes figurines in faience; terracotta animal figurines, carts and wheel, weights, balls, flesh-rubbers [18.4], discs, large flat-handled objects, dice [6.71], votive tanks [12.11], potters' stamps, pendants, ear ornaments, beads of coral, paste, lapis lazuli and shell; mortars, rotary querns, mullers, pestles [6.19] and whetstones of stone [16.18]; bone objects; handles of bells; bracelets, rings and clasps of bronze; ladles; handles of vessels; and iron socketed rings, sickles, arrowheads, spearheads, bowls, bells and hooks.

Nearly 105 coins were found, out of which the identifiable ones belong one each to Kaniska I, Huviska and Vāsudeva. The remaining belong to Kaniska III and the Murundas. Besides, there are inscribed clay tablets, terracotta sealings and bronze seals.

The Rang Mahal culture, as a distinct entity represented by certain ceramic types, has its focus in n. Rajasthan in the Sarasvatī valley: there are nearly 25 sites of this culture, out of which the important ones apart from Rang Mahal are AMARPURA, BHAGWANSAR, etc. Some sites are quite extensive and a few have mud fortifications. At RER the remains of this culture were seen to overlie a deposit of burnt material below which was represented PGW culture [4.15].

A few moulded and painted specimens have a very wide dispersal. Some geometric patterns and festoons occurring on the Rang Mahal vessels have affinity with those from Sirkap. The painted and spouted vase bowl, stand and incense burner have also been reported from

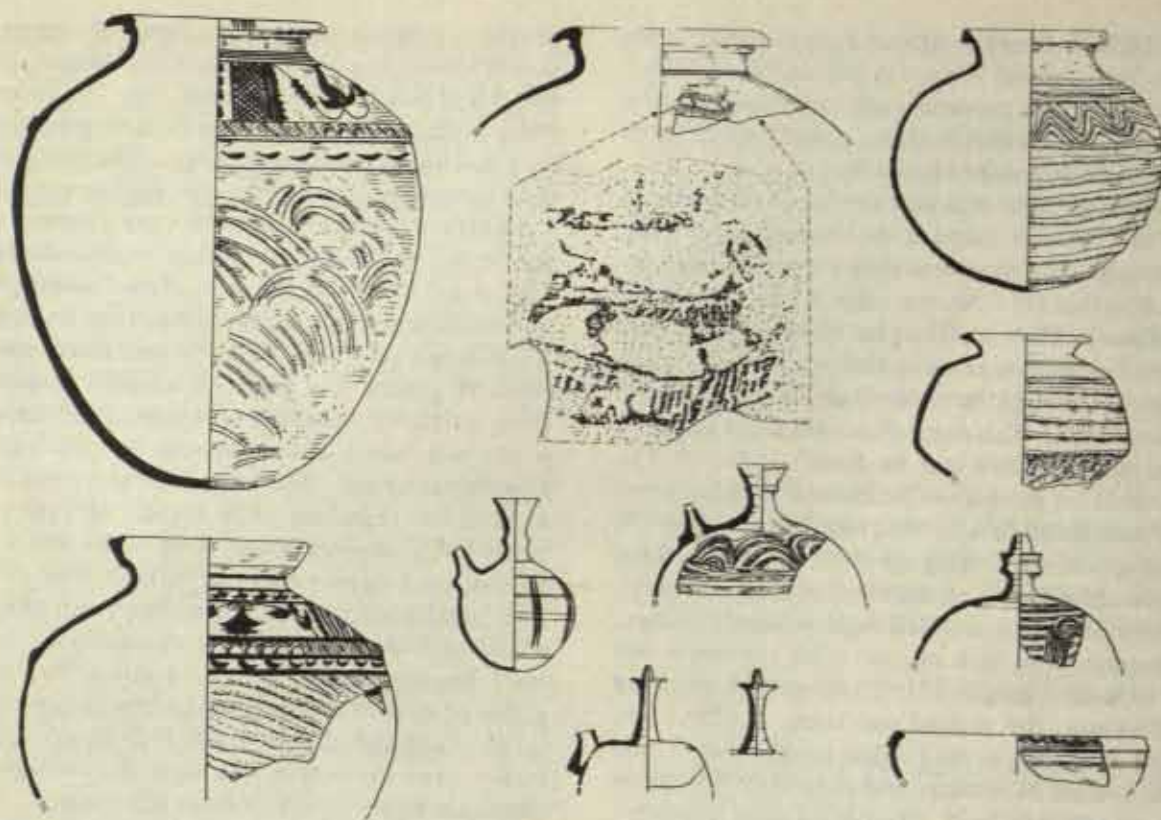


Fig. 14 Rang Mahal Pottery.

many sites of n. India, such as SARAINAGAR, VIRBHADRA, HASTINĀPURA, BATESWAR, AHICCHATRĀ, BHITA, etc. as well as sites in Gujarat and even Madhya Pradesh. The sprinkler in the Red Polished Ware [11.23] occurring at Rang Mahal has a very wide distribution in India from the 1st to c. 5th century, with a concentration in w. India. Rydh believes in a similarity between the bowls of Rang Mahal and ARIKAMEDU. She has further stressed that the moulded pottery of Rang Mahal owed its inspiration to the *terra sigillata* of the Romans. All this is uncertain.

It appears that the Rang Mahal culture formed a part of the larger eclectic cultures of n. India of the early centuries of the Christian era, though nowhere are its traits as extensive in the middle Sarasvati valley.

Ghosh, A., 1952, in *Bull. National Inst. of Sciences in India*, 1, pp. 37-42. Jain, K.C., 1972, *Cities & Towns in Rajasthan*, Delhi, pp. 39-45. Margabandhu, C., 1979, in *Vishveshvaranand Indological Jour.*, 17, pp. 206-15. Ramachandran, K.S., 1971, *Indian Arch. Sites*. Hyderabad. Rydh, H., 1959, Rang Mahal, Lund.—R.P. SHARMA

Rang Mahal, Dt Ghazipur. NBPW [11.16] and early historical pottery.

IAR 1964-5.

Rangpur (22°26'; 71°55'), Dt Surendranagar, an extensive site on the Bhadar, where trial diggings were undertaken in 1935 by M.S. Vats (ASI—AR 1934-5). He declared that it was a site of the late period of Harappa

culture [4.9] on the basis of certain pottery types and painted designs thereon and that 'the mere fact that the Indus culture is by this discovery pushed so far s.-e. as Kathiawar is a matter of great importance'. Later on Ghurye, 1939, endorsed this view. However Dikshit after his excavation in 1947 felt that the remains were of a formative stage of a post-Harappa culture without any affinity with the Harappa (Dikshit, 1950). A large-scale excavation was undertaken by S.R. Rao of the ASI during 1953 to 1956 (Rao, 1962 and 1963) as a result of which he has classified the occupational deposit in four Pds with three Sub-pds in the Harappa culture, Pd II, with an earlier, Pd I, Microlithic [4.5], and even a Middle Palaeolithic [4.3] stage, the last encountered in the river section, with points, scrapers and blades of jasper. The sequential datings as given by him are as follows: Pd I: Microlithic unassociated with pottery, 3000 B.C.; Pd II A: Harappa 2000-1500 B.C.; Pd II B: late Harappa, 1500-1100 B.C.; Pd II C: transition phase of the Harappa, 1100-1000 B.C.; and Pd III: Lustrous Red Ware [11.9], 1000-800 B.C.

Pd I. Mesolithic [4.5] geometric microliths are met with in a gravel bed on the n.-w. slope of the mound. The tools comprise triangles, points, arrowheads, borers and scrapers in jasper and agate. A tentative dating of 3000 B.C. is based on a 1-m thick barren silt deposit below of

the Harappa occupation.

Pd II A. The Harappa occupation, believed to be a refugee settlement from LOTHAL after the floods there, is seen in the n.-w. part of the mound, with four structural phases. The houses are built on solid mud-brick platforms and the floors are paved with mud brick. One house has a lime-and-hemp floor. Drains of kiln-burnt brick are attached to baths, and there is a 1 m deep public drain of burnt brick. Sturdy red and buff, coarse red and grey wares constitute the main ceramics with micaceous red and black-and-red [11.6.1] ware holding insignificant positions. The red and buff wares have a thick slip. The dish-on-stand with a projected rim and carinated shoulder, thick storage jar with a slightly convex profile and flat rim, cylindrical perforated jar, S-shaped vessel with provision for receiving the lid, jar with a small neck, bulbous body and flat base, goblet, beaker and jar stand are the main types in the red and buff wares. In the grey ware there are the thick jars with an outstretched or flaring rim and flanged shoulder, slightly burnished in the upper one-third and rarely decorated with incised designs, and a highly burnished dish of superior variety with an expanded rim. In the micaceous red ware are seen the small bulbous jar with a flaring rim, convex-sided bowl and bowl with or without a stud-handle, the last confined to the Gujarat Harappa. The painted designs are in black over red, chocolate over buff and deep-black over deep-red. Geometric designs like hatched diamonds, loops and horizontal bands have preference over naturalistic ones such as fish-net, fish-scale and plant.

Copper celts and pins, cubical agate weights, shell bangles, copper bangles and rings, a steatite ornament of floral design, a hoard of 4900 tubular microbeads of steatite in a jar, cylindrical beads of steatite, carnelian and faience, lenticular beads of agate and disc beads of steatite and gold comprise the other antiquities. No seals or sealings or objects of definite cult value have been found. The occupation of the Pd was destroyed by floods.

Pd II B. The occupation new was in the c. and e. parts of the mound. The structures were possibly of mud and have left no traces. No baths or drains have been noticed. The pottery is of coarse fabric and indifferent treatment. The red ware predominates but the buff and micaceous red ware are found in limited quantities. But for the jar of various sizes and a limited use of the goblet, beaker and perforated jar, the shapes in red and buff are almost similar to those of Pd II A. In the micaceous red ware there are the small jars with a flaring rim and convex-sided bowl. The paintings in black over red and chocolate over buff are indifferent. Occasionally a bichrome effect is given by a pinkish colour. The peacock is the only important motif.

Pd II C. According to Rao, 'it is only the resurgence of the Harappa culture in a new garb.' The people looked for better amenities and attempted to revive the tradition of painting pots. The designs are simple linear. The burnishing of the pots over a thick red slip gives a lustrous effect. The personal ornaments are in locally available materials like jasper and agate. The structures were probably of mud brick and timber with fairly large rooms. Two clay enclosures have been found. The pottery is mainly represented by the Lustrous Red Ware [11.9], the black-and-red ware being limited. The main types are the vessel of medium size. The bowl has a blunt and sharp carinated shoulder; the jar has a high neck and elongated body, the stem of the dish-on-stand becomes short, thin and cylindrical; and the dish develops a beaded rim losing the carination at the shoulder. The stud-handled bowl though rare is larger both in size and handle. Typical Harappa shapes like the perforated jar, goblet, beaker, etc., are absent. The paintings are in deep-black over deep-red. Hatched diamonds, oblique lines in groups, suspended intersecting loops, hatched circles and loops are the favourite designs. Running antelopes are noteworthy, as also bulls with X-shaped horns. The surface is divided into compartments for paintings. Biconical beads of agate and terracotta, jasper tools and copper celts form the other antiquities.

Pd III. Houses are made of mud brick and show two phases, with lime and mud as binding material and clay rammed in the foundation. In ceramics the Lustrous Red Ware and black-and-red ware continue, and coarse red ware is found in a substantial quantity. The vessels are of a small size with thin walls. The core is gritty and smoky though the surface is smooth and burnished. The main types are the deep bowl with a concave-convex profile and carinated shoulder, often with ring-footed, base, short-stemmed bowl, dish with a fully beaded rim and high-necked jar with an ovoid body. The paintings are in deep-black over deep-red and consist of horizontal, oblique and vertical lines, hatched elongated diamonds, intersecting loops, fronds and honeycombs. The bull and deer represent the animal figures. The black-and-red ware has oblique and wavy lines in dirty-white over black. Terracotta animal figures include the horse, bull, dog and pig. Jasper and agate are the material for lithic implements and beads. The animal remains are mainly the *Bos indicus*, *Bos (Bubalus) bubalis*, *Ovis vignei*, *Capra hircus aegagrus* and *Sus scrofa cristatus*. New species like the *Canis familiaris*, *Xancus pyrum*, *Chitra indica*, *Equus asinus* and *Cervus unicolor* also appear. The charred grains indicate use of *bajra* and *jawar* [2.2].

As no ¹⁴C dates are available the dating of the Pd of Rangpur is based on a number of considerations, viz. thickness of deposits, changes in ceramic traditions and

comparison with other sites both typologically and on the basis of ^{14}C dates for LOTHAL NAVDATOLI.

Rao no doubt admits the arrival of new elements in Pds II C and III but at the same time feels that they were due to contact. According to him the equipments of Pd II C are an evolution from the Harappa culture. Defining the importance of Rangpur Rao says: 'The penetration of the Harappa culture into the Kathiawad peninsula, its survival up to the end of the 2nd millennium B.C. in a decadent form, subsequently transforming itself into the Lustrous Red Ware culture, and the establishment of a continuous cultural sequence from 2000 to 800 B.C. are important contributions made by the excavation at Rangpur.' (But it may be difficult to regard the new elements of Pds II C and III, particularly the Lustrous Red Ware, as evolved from the Harappa and as such a continuity of the Harappa sequence till 800 B.C., which itself may be too low a date for Pd III, is open to question.)

Dikshit, M.G., 1950, in *Bull. Deccan College Res. Inst.*, II. Ghurye, G.S., 1939, in *Jour. Univ. Bombay*, 8. Rao, S.R., 1962 and 1963, in *AI*, 18 and 19, pp. 4-207.—K.M. SRIVASTAVA

Rangupura, Dt Mysore. Megalithic [4.17.8] cairn circles.

IAR 1962-3.

Ranhai, Dt E. Nimar. Microliths (of unspecified nature).

IAR 1960-1.

Ranifalia, Dt Valsad. Middle (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) site.

IAR 1968-9.

Ranigam (21°58'; 71°45'), Dt Bhavnagar. Site in the Ghelo valley with late Harappa Ware [11.3], coarse corrugated ware, Lustrous Red Ware [11.9], Chalcolithic black-and-red ware [11.6] and Red Polished Ware [11.23].

IAR 1960-1. AI, 18 & 19, 1962 & 1963, p. 206.

Ranihat (30°12'; 78°47'), Dt Tehri, 2 km s.-w. across the Alakananda river at Srinagar, was excavated in 1977 by the Dept of Ancient History, Culture and Arch. of Garhwal Univ. under the writer with assistance from B.M. Khanduri and technical help from the ASI. The deposit, 3-1 m thick, in the shape of a flat fertile field, is divisible in three occupational Pds.

Pd I. The distinctive pottery of this Pd is a glossy, fine and thin red ware with shades varying from red to chocolate and crimson along with sherds of fine unpainted grey ware. No structural activity has been noticed. The iron and copper antiquities comprise fish-hooks [6.6], arrowheads and needles [6.15], besides charcoal and abundant burnt and unburnt bones. The Pd may belong to c. 5th-4th century B.C.

Pd II. The Pd has a crude variety of the NBPW [11.16] along with the rimless *hāndī*, miniature bowl, jar of the shape of Ahicchatra 10a (*AI*, 1, pp. 42), etc.—all in red

ware—similar to the early historical sites in the Ganga plains. Bricks (30×23×7 cm) are used in houses. There is a brick jelly floor having a hearth with covering wall laid over a pebble foundations. The other objects are similar to those of Pd I, in addition to a knife with bone handle and a few terracotta objects, all assignable to c. middle of the 4th to the end of the 3rd century B.C. The late phase of the Pd is marked by structures of stone and robbed brick of the earlier phase. In pottery, besides the other usual types with thumb and grooved impressions, the elongated neck of a jar of the Red Polished Ware [11.23] from the late level compares well with the c. and w. Indian type of the beginning of the Christian era. This Pd may be placed to c. 2nd century B.C. to the 1st century A.D.

Pd III. The site was left abandoned for a long time and was reoccupied in about the 8th century for about 300 years. Houses are built of dressed stone slabs and the pottery is conventional, such as the carinated *hāndī*, knife-edged bowl, large basin, etc.

—K.P. NAUTIYAL

Ranikhadkula, Dt Dhule. Palaeolithic tools and microliths (both of unspecified nature).

IAR 1958-9.

Ranipur, Dt Mandsaur. Lower Palaeolithic [4.2] site.

IAR 1965-6.

Ranipura, Dt Bharuch. Middle Palaeolithic [4.3] and Mesolithic [4.5] site.

IAR 1970-1.

Rani Ran, Dt Jind. Siswal and late Harappa [11.4] wares.

Suraj Bhan & Shaffer, J.G., 1978, in *Man & Environment*, 2, p. 62.

Raniya (29°32'; 74°50'), Dt Hissar. Seven Rang Mahal [11.24] sites near the place. Of them Raniya-3 (Lahoronwali Theri) has also PGW [11.16], grey ware, Black-slipped Ware [11.13] and medieval ware.

IAR 1967-8.

Ranjala, Dt Dhule. Chalcolithic [4.14.6] habitation site with microliths and black-on-red and burnished grey wares. Pre-Chalcolithic microliths were also found. An important discovery was that of a pit burial containing, besides fragmentary human bones, typical Megalithic pottery [11.15.3]. No megaliths were however encountered.

IAR 1960-1.

Rankhandi, Dt Saharanpur. PGW [11.14] site.

IAR 1965-6.

Ranparda (21°15'; 69°40'), Dt Jamnagar. Late Harappa [4.10] site corresponding to RANGPUR II B and II C.

IAR 1957-8. AI, 18 & 19, 1962, 1963, p. 206.

Ranparsodi, Dt Chanda. Megalithic [4.17.6] stone circles.

IAR 1962-3.

Rasemar, Dt Mainpuri. PGW [11.14] site.

IAR 1961-2.

Rashmi, Dt Chittaurgarh. Site with black-and-red ware

(of AHAR² [11.6.2?])

IAR 1966-7.

Rasikdih, Dt Purulia. Microliths (of unspecified nature).

IAR 1959-60.

Rasnal, Dt Jamnagar. Harappa [4.9] site.

IAR 1958-9.

Rasulpur¹ (29°34'; 75°9'), Dt Hissar. Two Rang Mahal [11.24] sites.

IAR 1967-8.

Rasulpur², Dt Saharanpur. OCW [11.5] and PGW [11.14] site.

IAR 1963-4; 1967-8.

Ratadia, Dt Kutch. Middle Stone Age (Middle Palaeolithic [4.3]) tools such as flake blades, scrapers, cores, points, etc.

IAR 1963-4.

Rataipur, Dt Kanpur. Mounds (of unspecified nature).

IAR 1970-1.

Ratanpur. Dt E. Nimar. Microliths (of unspecified nature).

IAR 1958-9.

Ratan-Tekri, Dt Banas-Kantha. Microliths (of unspecified nature).

IAR 1964-5.

Ratanzana. See GAMBHIRI VALLEY. (Same as following?)

Rathanjha, Dt Chittaurgarh. Situated on the Gambhiri the site yielded a large number of handaxes, besides cleavers and choppers (of the Lower Palaeolithic [4.2] complex). (Same as preceding?)

IAR 1954-5.

Rathanwala Tibba, Dt Ganganagar. Rang Mahal ware [11.24] site in the SARASVATĪ VALLEY.

Unpublished.

Rati Karar, Dt Narsinghpur. See NARMADA VALLEY.

IAR 1960-1. Sankalia, H.D., 1974, *Prehistory & Protohistory of India & Pakistan*, Poona, p. 116.

Ratnagiri¹ (20°38'; 86°20'), Dt Cuttack, a small hill known even before its systematic excavation for its rich yield of Buddhist sculptures of the late historical period, along with that of two other hills in the neighbourhood, Lalitagiri (Naltigiri) and Udayagiri (Chanda, 1930). Ratnagiri figures in some late Tibetan texts, among them in the history of Buddhism in India by Tāranātha who says that the Ratnagiri-vihāra was built in the reign of Buddhapokāsa (identified uncertainly with the Gupta king Narasimhagupta Bālāditya) and that here were preserved scriptures of Mahāyāna and Hinayāna sects and lived 500 monks. Excavation here by ASI under D. Mitra (IAR 1957-8, p. 39, 1958-9, p. 33; 1959-60, p. 38; 1960-1, p. 28) has yielded the remains of an imposing *stūpa*, the Main Stūpa, three monasteries, a number of temples and small *stūpas*. The overwhelming number of these minor *stūpas* is an eloquent proof of its immense popularity and sanctity as a centre of Buddhism.

On the spur of the hill stands the Main Stūpa of which

only the solid platform with a few courses of its circular drum extant. The platform, 14.5 m sq at the base, is laid in mud mortar and was originally finished with plaster, patches of which are still visible here and there. The platform is of fine brickwork and is relieved with elegantly moulded projections and recesses on each side. The *stūpa* was built prior to the 9th century over the ruins of an earlier one which is ascribable to the Gupta period on the basis of an inscription of the Buddhist text *Pratitya-samutpāda-sūtra* in Gupta characters recovered from the earlier debris. At a later date the *stūpa* which had fallen into disrepair was extensively restored. Two circular walls were erected at two different levels over the accumulated debris on the platform. Simultaneously a shabby compound wall was erected to enclose a wide area around the restored *stūpa*.

Around this *stūpa* are clusters of smaller *stūpas* of brick and stone of varying dimensions. Some of them have yielded charred bones and others terracotta plaques inscribed with the Buddhist creed [12.8] and *dhāraṇīs*. On the s.-w. side of the *stūpa* have been exposed hundreds of miniature monolithic *stūpas* lying in a haphazard condition. The state of preservation and different stages of execution of these *stūpas* seem to indicate the existence of a centre locally manufacturing them.

To the n. of the Main Stūpa are the remains of two magnificent monasteries with a narrow passage in between. The larger of the two, Monastery 1, measuring 54.8 m square, has an elaborate plan comprising a spacious courtyard, enclosed by a pillared veranda around which are 24 cells, a shrine in the centre of the back wall having richly carved stone door-frames and an elaborate entrance-complex. Within the shrine is installed on a spacious pedestal a colossal image of Buddha seated in *bhūmi-sparśa-mudrā*, 4.59 m high from the base. The monastery had an upper storey which was approached by a grand flight of stone steps in the s.-w. corner, remnants of which have been found. The architectural grandeur and sculptural exuberance of the monastery, particularly its exquisitely carved chlorite door-frame, make it an outstanding building. The monastery was reconditioned in the second phase, when all the residential cells of the ground floor were filled in and the habitation shifted to the upper storey. But the shrine together with the courtyard, veranda and entrance porches continued to be in use. The third or the decadent phase is marked by the erection of shabby walls particularly on the veranda to provide additional rooms.

Monastery 2, 29 m sq, is single-storeyed with 18 small cells, each provided with an arched opening and a stone window of pleasing design. The shrine contains a standing stone image of Buddha in *varda-mudrā*. It was built after the first phase of Monastery 1 over the ruins of an

earlier one which was not later than the 7th century. An underground chamber discovered below the stone floor of a cell has yielded a few bronze objects including two images.

A single-winged structure exposed behind Monastery 1 consists of a row of three cells fronted by a veranda. Two copper-plates of the Somavamsi king Karna had earlier been found in a corner of this building by the local people.

Among the temples uncovered in the excavation three stand in a row near the s.-e. corner of Monastery 1. They are of the Orissan style and are datable to the 10th century. Another complex comprising three temples of the same style has been exposed in front of Monastery 2. On grounds of the artistic styles of the enshrined images the temples are assignable to the 9th and 10th centuries.

The excavation has yielded a rich crop of antiquities which include a large number of stone sculptures of various Buddhist divinities, bronze objects like images, *stūpas*, umbrellas and other decorative pieces, iron objects including daggers, stone objects of daily use like rotary querns [6.19] and other evidences on the life in the monasteries. The images displaying different styles and workmanship belong to different periods. The profuse occurrence of bronze objects indicates that Ratnagiri was a centre of bronze-casting. Besides there are innumerable clay sealings and inscribed terracotta plaques. Of great significance are the terracotta sealings with the legend *śrī-Ratnagiri-mahāvihāriyārya-bhikṣu-saṅghasya* which not only gives the name of the establishment as it persists even to this day but proves that Ratnagiri like Nālandā was a renowned centre of learning attracting students and scholars from far and near.

Chanda, R.P., 1930, *Explorations in Orissa*, Mem. ASI, 44, Mitra, D., 1971, *Buddhist Monuments*, Calcutta, pp. 225-31.—S.K. MUKHERJEE

Ratnagiri¹, Dt Dharmapuri. Megalithic [4.17.9] site with stone circles.

IAR 1967-8.

Ratnapur, Dt Ganjam. Microliths (of unspecified nature).

IAR 1963-4.

Ratpur, Dt Ambala. Terrace 1 of the river SIRSA yielded ground stone axes.

IAR 1971-2.

Ratti Khera, Dt Ganganagar. Rang Mahal [11.24] site in the SARASVATĪ VALLEY.

Unpublished.

Ravar, Dt Gulbarga. Megalithic [4.17.8] site with dolmens.

Jour. Geological Survey of Hyderabad, 5, 1, p. 56.

Raverkhedi, Dt W. Nimar. Lower Palaeolithic [4.2] tools and microliths (of unspecified nature) were found along the NARMADA.

IAR 1957-8; 1964-5.

Ravi, Dt Chanda. Menhirs [4.6].

IAR 1960-1.

Ravipadu, Dt Kurnool. Lithic tools (of unspecified nature) and megaliths [4.17.7] were found close together.

IAR 1959-60.

Ravirela, Dt Krishna. Megalithic [4.17.7] site.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Rawalkanda, **Rowadalbanda**, Dt Raichur. Chalcolithic [4.14.8] and early historical [4.18.11] site.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 126. AR Hyderabad Dept of Arch., 1935-6, pp. 2, 19.

Rawalwas Kalan, Dt Hissar. Early historical [4.18.1] site.

Silak Ram, 1972, unpublished thesis, Kurukshetra Univ.

Rawatsar, Dt Ganganagar. Rang Mahal [11.24] site in the SARASVATĪ VALLEY.

Unpublished.

Rayachoti, Dt Cuddapah. Mesolithic [4.5] site.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras. IAR 1964-5. Jour. Karnataka Univ., 11, pp. 6, 21.

Rayadrug, Dt Anantapur. Neolithic [4.6.8] site. See AKKAMMAKONDA.

IAR 1956-6.

Rayangola, Dt Gulbarga. Grey ware and blade tools.

IAR 1965-6.

Rayatale, Dt Ahmadnagar. Tools of Series II (Middle Palaeolithic [4.3]), microliths (of unspecified nature) and sherds of thick grey ware and early historical [4.18.9] pottery characterized by black-and-red and red wares.

IAR 1960-1.

Rayavaram, Dt Nalgonda. Lower Palaeolithic [4.2] site on a high ground on the confluence of the Peddavagumulla with the Krishna. The tools comprised handaxes, ovates, cleavers and a small number of bifacially worked choppers on quartzite pebbles, representing typologically the Abbevillian to Acheulian stages.

IAR 1959-60.

Raygadh. See KAN VALLEY.

Raypur and Bhadgaon, Dt Dhule. Early, Middle (Lower, Middle Palaeolithic [4.2, 3]) and Late Stone Age (Mesolithic [4.5]) tools.

IAR 1965-6.

Raytel, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1966-7.

Reddikuppam, Dt Chingleput. Megalithic [4.17.9] site.

AI, 22, 1966, p. 30.

Reghra, Dt Mirzapur. Upper Palaeolithic [4.4] site with blades, points, scrapers and burins.

IAR 1970-1.

Reha, Dt Monghyr. Late Stone Age (Mesolithic [4.5]) tools comprising bladelets, a few crescents and cores, as also mace-heads and a celt of Neolithic [4.6.4] association. (Same as following?)

IAR 1965-6.

Rehana, Dt Monghyr. Late Stone Age (Mesolithic [4.5]) tools and two pieces of ring or hammer-stone and a small-sized polished celt. (Same as preceding?)

IAR 1962-3.

Rehli¹, Dt Dhule. Lower and Middle [4.2, 3] tools on the river Sonar.

IAR 1958-9.

Rehli², Dt Sagar. Lower and Middle Palaeolithic [4.2, 3] tools *in situ* from cemented gravel bed.

IAR 1958-9. AI, 17, 1961, pp. 5-36.

Rel¹, Dt Bharuch. Late Stone Age (Mesolithic [4.5]) site.

IAR 1969-70.

Rel², Dt Kaira. Chalcolithic [4.14] site.

IAR 1972-3.

Remidicharla, Dt Krishna. Sites with dolmens [4.17.7].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Rena, Dt Panch Mahals. Microlithic (of unspecified nature) site.

Arch. Congress & Seminar, 1972, Kurukshetra, 1976.

Renawara, Dt Junagadh. Site with Red Polished Ware [11.23].

IAR 1957-8.

Rengabodi, Dt Chanda. Lower Palaeolithic [4.2] site.

IAR 1960-1.

Rengachangiri, Dt Garo Hills. Neolithic [4.6.6] tools and pottery predominantly grey in colour.

IAR 1966-7.

Rengnodia, Dt Indore. Lower Palaeolithic [4.2] and Mesolithic [4.5] site.

IAR 1970-1.

Renigunta, Dt Chittoor. Stone tool assemblages are prolific in occurrence and fall into (i) an Early Stone Age (Lower Palaeolithic [4.2]) industry; (ii) a Middle Stone Age (Middle Palaeolithic [4.3]) industry; (iii) a blade-and-burin (Upper Palaeolithic [4.4]) industry; and (iv) a non-geometric Late Stone Age (Mesolithic [4.5]) industry. The raw material in the first three is quartzite of different shades and in the fourth milky quartz and crystal.

IAR 1966-7.

Rentala, Dt Guntur. Tools of the Early Stone (Lower Palaeolithic [4.2]) Age.

IAR 1961-2.

Renuka, Dt Agra. PGW [11.14] and NBPW [11.16] site 16 km w.-n.-w. of Agra on the right bank of the Yamuna.

IAR 1955-6.

Reona, Dt Kanpur. NBPW [11.16] site.

IAR 1968-9.

Repanpalli, Dt Chanda. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1961-2.

Repparahalli, Dt Kolar. Site with black-and-red (of un-

specified nature) and red wares.

IAR 1972-3.

Rer, Dt Ganganagar. PGW [11.14], Rang Mahal Ware [11.24], terracotta stamp, animal figurines, dabber [16.11], balls and beads and shell bangles and four copper coins including a Kushan one. Excavation showed that the PGW and Rang Mahal levels were separated from each other by a thick layer of burnt material. See SARASVATĪ VALLEY.

Unpublished.

Rer Tibba, Dt Ganganagar. Site with PGW [14], Rang Mahal Ware [14.24], shell bangles and microliths in the SARASVATĪ VALLEY.

Unpublished.

Reri Malakpur, Dt Saharanpur. Harappa [4.9] and OCW [11.5] site.

IAR 1966-7.

Reta, Dt Sagar. Lower Palaeolithic [4.2] and microlithic (of unspecified nature) site.

IAR 1960-1.

Rewari¹, Dt Gurgaon. Four flat celts of copper [4.11].

Objects in State Museum, Jhajjar. Information from S. Asthana.

Rewari², Dt Mahendragarh. Copper Hoard [4.11] site.

Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, p. 126.

Rewari³, Dt Sikar. Site not far from GANESHWAR yielding two copper bar celts similar to those from NAN-DALALPURA.

Man & Environment, 3, 1, 1979, p. 92.

Richocha, Dt Sawai Madhopur. Kushan red ware.

IAR 1971-2.

Richpal, Dt E. Nimar. Microliths (of unspecified nature).

IAR 1958-9.

Rihand, Dt Mirzapur. Site with tools of Series I and II (Lower and Middle Palaeolithic [4.2, 3]) and microliths (of unspecified nature) 200 m from the Rihand dam at Gaharwargaon Ghat.

IAR 1959-60.

Rihutia-chak, Dt Banda. Neolithic [4.6.3] polished stone axes and hammer stones.

IAR 1961-2.

Rima, Dt Jabalpur. Microliths consisting of blades, crescents, scrapers and cores.

IAR 1958-9.

Rindhana, Singhadua ala, Dt Rohtak. Pre-Harappa [4.8] site.

Jour. Haryana Studies, 3, 1, p. 4.

Ringmodya, Dt Indore. Lower Palaeolithic [4.2] Clactonian flakes were collected from the hills near the place.

IAR 1970-1.

Rishikesh, Dt Dehra Dun. Early historical [4.18.1] site.

IAR 1963-4.

Ritoli, Dt Kurukshetra. Harappa [4.9] and grey ware site.

IAR 1966-7.

Ritpur, Dt Amravati. Site with a large number of points, borers, scrapers, cores and flakes. The tools showed a

slight evolution from the Middle (Middle Palaeolithic [4.3]) to the Late Stone (Mesolithic [4.5]) Ages.

IAR 1963-6.

Roda, Dt Sabar-Kantha. In the vicinity of the group of 9th-10th century temples a crested-bridge flake [16.5.2] was picked up.

IAR 1958-9.

Roadalkondi, Dt Raichur. Neolithic [4.6.8] pointed-butt polished stone axes.

AI, 4, 1947-8, p. 298.

Rodgi, Dt Bijapur. Black-on-red painted Chalcolithic [4.14.8] pottery. See BALLOLI.

IAR 1957-8.

Rodkunda, Dt Raichur. Neolithic [4.6.9] site.

Information from A. Sundara.

Roghada, Dt Rajkot. Early historical [4.18.2] site.

IAR 1958-9.

Roha, Dt Kolaba. Middle Stone Age (Middle Palaeolithic [4.3]) site on the Kundalika.

IAR 1966-7.

Rohan, Dt Rupnagar. PGW [11.14] site.

IAR 1964-5. Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 122.

Rohira, Dt Sangrur. Mound with Harappa Ware [11.3] and grey, Sunga-Kushan red and medieval wares.

IAR 1964-5. Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 122.

Rohniya-ka-Kot, Dt Jaunpur. NBPW [11.16] site.

IAR 1963-4.

Rohone, Dt Dhule. Middle (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) tools.

IAR 1962-3.

Rohtak, Dt Rohtak. Rang Mahal Ware [11.24] and early historical [4.18.1] pottery were found at Rohtak-I (Khokhra Kot) and pre-Harappa [11.2], PGW [11.14], Black-slipped Ware and NBPW [11.16] at Rohtak-II (Ramala ala).

Jour. Haryana Studies, 3, 1, p. 5. Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 125.

Rojdi, renamed Srinathgadh; (21°51'; 70°54'), Dt Rajkot, on the Bhadar, 20 km n.-e. of Gondal, the mound, 500×200 m in dimensions, situated about half a km e. of the village. Excavation was conducted by the Gujarat State Dept of Arch. in 1957-59 and again in 1962-63 (IAR 1957-8, p. 10; 1958-9, p. 19; 1962-3, p. 8). Three Pds, each with a long hiatus in between, have been noticed; in addition Lower and Middle Palaeolithic [4.2, 3] relics exist in the formations below the mound and in the gravels of the Bhadar (IAR 1958-9; 1962-3).

Pd I (Harappa). The Harappa [4.9] occupation is divisible into two phases. In Phase A, just above the silt, a mud platform about 1 m high is seen supporting a succession of seven lime floorings alternating with rammed material. The lower three floor levels particularly have signs of intense burning. Small quantities of pot-

tery, comparatively less varied in shape, small in size but generally with a red slip and at times decorated with bands, have been found. In Phase B the settlement was expanded and had increased prosperity, with a second mud platform at the start of the phase. High-quality Harappa pottery [11.13]—the storage jar, large globular vessel painted with vegetal patterns, dish-on-stand, convex-profile bowl and perforated vessel—now dominate the scene. The stud-handled bowl peculiar to Gujarat Harappa is also present. Buff ware is more common now. Mineral beads, chert weights, copper celts and fish-hooks affiliate the phase to the mature Harappa culture represented at LOTHAL and RANGPUR. A bowl with a small earthen pot inside the latter with hundreds of tiny steatite beads and 21 larger gold-foil beads in three different grades is noteworthy. A striking discovery is that of 520 gold microbeads, evidently forming a necklace, in a small pot found during seasonal clearance. Together with the beads there were also two small silver bangles, 18 gold beads of a larger size, eight gold beads of barrel shape and steatite beads. Two ¹⁴C dates are available for this phase: 1970±115 and 1745±105 B.C.

Pd II (Ksatrapa). The site was re-occupied for a short time after a gap of nearly two millennia as is evidenced by the presence of the Red Polished Ware [11.23] and a few associated finds.

Pd III (medieval). Following another long spell of desertion Rojdi was re-occupied in medieval times, with glazed ware and coins of Sultan Muhammad II of Ahmadabad and with a fort wall of huge boulders.

—J.M. NANAVATI

Rojgaon, Dt Dhule. Chalcolithic [4.14.6] burial site.

IAR 1964-5.

Roli, Dt Belgaum(?). Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3]) tools.

IAR 1963-4.

Romp, Dt Mirzapur. NBPW [11.16] site.

IAR 1962-3.

Ronda, Dt Bulandshahr. Sunga-Kushan red ware.

IAR 1964-5.

Rongdu, Dt Garo Hills. Stone tools and pottery were found. For the first time in e. India stone tools resembling Palaeolithic [4.2] choppers and scrapers were discovered.

IAR 1966-7.

Rongram-1, Dt Garo Hills. Stone tools [4.6.6] including those of the Hoabinhian type, cores, flakes, axes, adzes, hoes, long narrow celts, grinding stones and potsherds predominantly grey in colour were found.

IAR 1963-4; 1966-7; 1971-2.

Rongram-2, Dt Garo Hills. Early, Middle (Lower, Middle Palaeolithic [4.2, 3]) and Late Stone Age (Mesolithic [4.3]) site.

IAR 1970-1.

Rongru Abri, Dt Garo Hills. Stone tools [4.6.6] includ-

ing those of the Hoabinhian type cores, flakes, axes, adzes, hoes, long narrow celts, grinding stones and potsherds predominantly grey in colour were found.

IAR 1964-5; 1966-7.

Ronp. Dt Mirzapur. Site rich in microliths (of unspecified nature) and its rock-shelters equally rich in paintings [13] of different periods sometimes superimposed on each other.

IAR 1956-7.

Ropar, earlier spelt as **Rupar** and now as **Rupnagar** (30°58'; 76°32'), Dt Rupnagar (formerly in Dt Ambala), lying on the left bank of the Sutlej, where the river emerges into the plains from the Siwaliks. The 21 m high mound here was excavated from 1952 to 1955 by the writer on behalf of the ASI (*IAR 1953-4*, p. 4; *1954-5*, p. 9). The operations were mainly vertical, and although several trenches were sunk the lowest cultural levels were reached only in parts of some of the trenches. The excavations yielded a sequence of six Pds: I (Harappa [4.9], c. 2100 to 1400 B.C.); II (PGW [4.5], c. 1000 to 600 B.C.); III (NBPW or early historical [4.18.1], c. 600 to 200 B.C.); IV (middle to late historical, c. 200 B.C. to A.D. 700); V (late historical, c. 700-1200); and VI (medieval, c. 1200-1700). Some of these Pds are divided into Sub-pds.

There are three mounds at Ropar, n., s., and w. The s. mound is occupied by the present-day town. Excavations were confined to the n. and w. mounds, the latter concealing a Harappa cemetery.

Ropar has the distinction of being the site where the remains of the Harappa civilization were excavated for the first time in post-Partition India. It is also the first site where the superimposition of the PGW over the Harappa was first demonstrated. (In the middle SARASVATĪ valley there is no such superimposition, the mounds of the two cultures being always distinct from each other.)

Pd I. The earliest Pd is described as Harappa, but predominance of one ceramic tradition or another in particular areas or levels suggests that the remains of the Pd should be divided into phases A, B and C. Evidence of Phase I A was found mainly in trench RPR-1 and its extensions, cutting the n. edge of the mound at the centre. Here in a representative section, although the lowest two layers 35 B and 35 A, have some Harappa pottery and other objects, the deposit is dominated by pre-Harappa wares, among which may be identified SOTH/Kalibangan I fabrics and types [11.2], and some other cognate wares from other sites. The dominating type is a medium-sized vase of matt red ware, with a wide black band painted at its concave neck and with an almost featureless rim. The neck and body are potted separately and subsequently luted. Fabric A of KALIBANGAN I is represented by the concave-necked vase

and bowl with flaring side characterized by irregular striations, dull plum-red surface and black-painted bands or criss-cross designs. Sherds with black and white paintings in typical KALIBANGAN I fabric also occur. To the same assemblage belongs a thick sherd with white-filled black-painted sun or flower symbol, a tradition noted in the pre-Harappa context at other sites. Examples of Fabric D of KALIBANGAN I are provided by the thick jar with ledged neck and out-turned rim and large carinated bowl. Roughened surface with wavy combings, a wet ware technique typical of Fabric B of KALIBANGAN I, is also in evidence. Characteristic of Phase I A are two surfaces, dull plum-red and matt ochre-red. Most of the pots are painted with dull-black bands on rims, necks and shoulder. The inside of the rim also often bears a painted band.

Among other types in I A levels are the wide-mouthed tall jar with long sloping shoulder, stemmed chalice and jar with grooves at the shoulder. The jar or vase painted with wide black band with diversification in necks and rims are characteristic of the pre-Harappa pottery from pre-defence Harappa, Amri, Kot-Diji, Sarai Khola II (all in Pakistan), SISWAL B and KALIBANGAN I. The jar with grooved body or shoulder is reported from pre-defence Harappa, Sarai Khola II and Jalilpur (all in Pakistan). Only traces of I A fabrics and types are noticed in RPR-2, the trench on the s. slopes of the mound barely 70 m away from RPR-1. Apparently I A represents the overlap of the pre-Harappa and Harappa, for apart from some Harappa shapes in pottery, among the antiquities from layers 35 B and 35 A are a bronze jar and broken celt, typical terracotta bangles and beads of steatite, paste and carnelian, all these being characteristic of mature Harappa culture.

In RPR-2, above traces of pottery of I A are found both Harappa and BARA wares, all mixed, but with an overrepresentation of the latter. Typical bronze objects including spearheads, arrowheads and razor blades, chert blades and cores and other mature Harappa artefacts also occur here. This assemblage is named I B. Somewhat similar mixed material is found in RPR-1 over I A levels, but the BARA ware is in low key here. In order to distinguish the two assemblages, although they are not radically different from each other, the phase overlying I A in RPR-1 is named I C. At present it is difficult to say if between I B and I C one preceded the other, and if so which one. These two phases represent an overlap between the Harappa and BARA, the two folks living together as neighbours, yet maintaining their independent identities.

Apart from mature Harappa objects named above, mention may also be made of beads and bangles of faience [16.6], triangular terracotta cakes [6.27] and chert weights. Compared with the mature Harappa as-

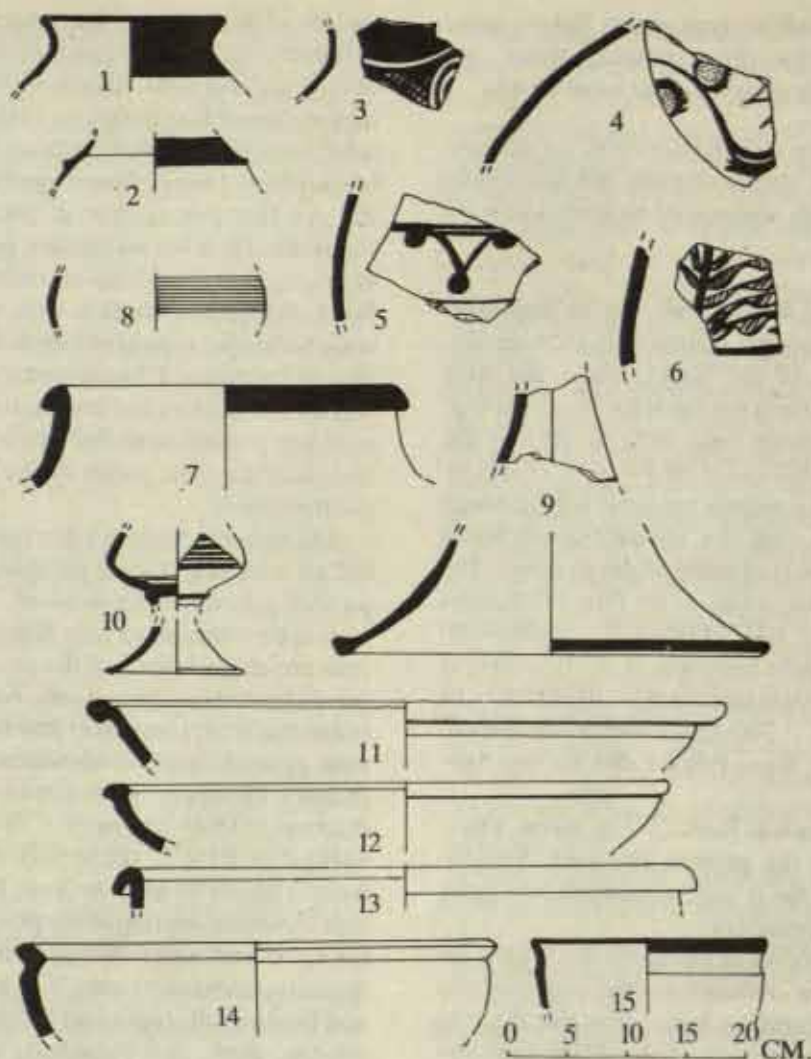


Fig. 15 Ropar pottery from Period I A.

semblage at Harappa and Mohenjo-daro, it is the absence of the goblet with pointed base and terracotta figurines including the mother goddess which strikes one most. In I A levels only one mud-brick wall of three courses has been encountered. The bricks are irregular in size but have a uniform thickness of 10 cm. The only wall noticed in I B at RPR-2 is built of river pebbles. Phase I C is however rich in housing remains with seven structures assignable to five phases. The building material consists of *kankar* stone, mud brick and kiln-burnt brick. One of the well-built houses has foundations of *kankar* stone and superstructure of mud brick. The kiln-burnt bricks measure 20×10×40 cm.

A single Harappa seal found in RPR-1 in I C levels is made of steatite and bears three familiar symbols on the obverse and two concentric circles on the reverse. It is thin and small without any holding device. Another burnt clay lump with a hole to pass a string through bears

impressions of three typical seals with bull motif and legend in the familiar script. Graffiti on pottery include the Indus script [20.4.1].

A cemetery of the Harappa, recalling Cemetery R-37 of Harappa, lies to the w. of the n. mound. It has been considerably disturbed by later occupants, mainly by the users of the PGW, but some of the burials are sufficiently intact to give an adequate idea of the method of burial. The body is laid in a grave pit, measuring 2.45 × .91 m and 60 cm in depth. The head is placed usually on the n.-w. Most of the burials contain an assemblage of typical pots, and some of them also reveal personal ornaments, such as bangles of faïence or shell, beads of faïence and semiprecious stones and ring of copper. A faïence bangle was intact on the left wrist of the wearer and a copper ring on the middle finger of the right hand. A single grave pit contained the skeleton of a dog at the bottom and that of a human being, presumably its mas-

ter, above it. There is very little BARA pottery in the graves and it is not known if the cemetery was common for both the Harappa and the Bara folks.

Among the animal bones of Pd I are *Chitra indica* Gray, *Gallus sp.*, *Canis familiaris* Linn. (the Domestic Dog), *Rattus rattus* Linn. (the Common Indian Rat), *Elephas maximus* Linn. (the Indian Elephant), *Bos indicus* Linn. (the Zebu or Domesticated Humped Cattle of India), *Bubalus bubalis* Linn. (the Indian Domesticated Buffalo), *Capra hircus aegagrus* Erxl. (the Domestic Goat), *Ovis aries dolichura* Duerst (the Domestic Sheep) and *Sus scrofa cristatus* Wagner (the Domestic Pig).

Information on town layout and house-plans is lacking at Ropar, since the concerned levels were reached over an extremely limited area. The s. mound with its present habitation could not be probed, and one does not know if Ropar too did have twin settlements in the Harappa days as at KALIBANGAN, RAKHI, GARHI and BANAWALI.

The excavators of KALIBANGAN date Kalibangan I to c. 2400-2250 B.C. on uncorrected ¹⁴C basis. With KALIBANGAN I pottery lying overlapped with the Harappa at the bottom layers of Ropar, c. 2100 B.C. could be thought of as the safest date for the beginning of Pd I with an average thickness of over 2 m a span of 700 years, ending at c. 1400 B.C. appears reasonable. The evidence of BHAGWANPURA² where BARA and PGW cultures are found interlocked would also lend an indirect support to this date, for the BARA complexion at BHAGWANPURA² appears to be only a devolution of the Sutej complex.

Pd II. After a long break the site was occupied by the users of the PGW, identified with the early Aryans by some and with the contemporaries of the later Vedic texts by others. Wheel-turned from well-leigated fine-grained clay, the PGW is sometimes self-slipped or covered with grey wash, but often it seems to have no surface treatment. After it is painted with designs in black it is subjected to even and gradually reduced temperature. The sagger-based dish with incurved side and deep bowl with straight side are the most common shapes in the PGW. The painted designs comprise bands, grouped verticals, oblique and criss-cross lines, sigmas, *svastikas*, spirals, chains, rows of dots and dashes and concentric circles or semicircles. Apparently the PGW was mainly used for purposes of dining. The discovery of a PGW water-pot (*loṭā*) at Ropar completes the normal set of dining utensils, consisting of a plate or dish (*thālī*) bowl (*kaṭorā*) and a water-pot (*loṭā*). The design is sometimes whitish-grey, which is obtained by blocking the design from the application of the slip. Other associated wares in these levels are plain grey ware, Black-slipped Ware [11.13] and dusty-red ware. The former two cover the same shapes as the PGW, but

the vessels of the dusty-red ware are largely used for cooking and storage, such as the frying pan, cooking pot (*hāṇḍī*), large bowl basin, water pitchers and storage jar.

Housing evidence in Pd II at Ropar is meagre, being confined to traces of mud walls. Burnt clay lumps with reed impressions indicate that the houses were generally made of daubed wattle.

Copper was the chief metal in use, but iron was also known. Lumps of iron slag [16.9.4], broken pieces of indeterminate objects and a fragmentary arrowhead provide the evidence of the beginnings of ironsmithy. Bangles of baked clay and glass and beads of baked clay, glass bone and semiprecious stones were used as ornaments. The characteristic terracotta beads are pear- or vase-shaped. In bone the gadrooned bead is peculiar to the PGW levels, while the glass bead is generally spheroid. Some of the bone points may have served as styli [20.5]. Terracotta discs [6.7.3] ornamented on the circumference and used perhaps as gaming counters are another distinctive manufacture of the Pd. While glass may have come into use in late Harappa times, the earliest firm evidence of its use comes from the PGW levels.

The animal bones from Pd II represent *Gallus sp.*, *Francolinus francolinus* Linn. (the Black Partridge), *Canis familiaris* Linn. (the Domestic Dog), *Bandicota bengalensis* Grey & Hardwicke (the Indian Mole Rat), *Equus asinus* Linn. (the Domestic Ass), *Bos indicus* Linn. (the Zebu or Domesticated Humped Cattle of India), *Bubalus bubalis* Linn. (the Indian Domesticated Buffalo), *Capra hircus aegagrus* Erxl. (the Domestic Goat), *Ovis aries dolichura* Duerst (the Domestic Sheep), *Axis axis* Erxl. (the Chital or Spotted Deer) and *Sus scrofa cristatus* Wagner (the Domestic Pig).

The appearance of the NBPW [11.16] has been taken to signify the end of Pd II and the beginning of Pd III, although the two ceramics existed side by side for some time. The dating of Pd II is a matter of opinion. Its upper terminal (i.e., c. 600 B.C.) is fairly certain, and it received indirect confirmation from ¹⁴C dates of the early levels of Pd III. As to the lower date the excavator feels that since the general ¹⁴C dating of the PGW in the Ganga valley is c. 900 B.C., it could not be later than c. 1000 B.C. on a Sutej site and was possibly even earlier. [As is well known, a later beginning as also a somewhat later end are advocated by some, e.g. Agrawal and Kusumgar, 1974, pp. 131-2.]

Pd III. The introduction and disappearance of the NBPW define the span of Pd III. Ropar was sufficiently removed from the Ganga plains of e. U.P. and Bihar, where the NBPW had its beginnings, yet over 450 sherds recovered from the limited excavated depths here proclaim its great popularity. It must have reached here obviously through pilgrims and traders. That it was not

locally manufactured and was a treasured piece of pottery is clear from the fact that broken NBPW vessels are often found joined with copper wire.

Pd III may be divided into Sub-pds, III A and III B. In trench RPR-2, out of nearly 300 NBPW sherds 85% occur in III A and only 15% in III B, which, however, is richer in structural remains.

Among the NBPW types at Ropar are the dish with sagger base, bowl, goblet with slightly everted rim, close-fitting flanged lid with a flat terminal, spouted jar and rimless carinated cooking pot (*hāṇḍī*). Most of these types occur also in plain red ware which were manufactured locally. Among other red ware types are: the bluntly carinated dish with sagger base, some with lugged rim; bowl with vertical, incurved or beaked rim; bowl-cum-lid with folded rim; basin with collared rim; large flat lid with finger-tip depressions and strap-handle; pear-shaped jar; beaker with everted rim; and *kulhar*-like pot, often with scored body. Another class of pottery represented mainly by the dish and bowl is a thick grey ware, often with dark-grey slip, which looks like a devolution of the PGW.

The houses in Pd III are built with *kankar* stone, kiln-burnt brick and mud-brick. The burnt-brick retaining wall of an oval-shaped reservoir [14, 14] of Pd III B was fed with rain water through an inlet. The wall is 3.65 m in width and is very impressive. It has been traced to a length of 75 m, beyond which it could not be followed as it lay below the present town. Ring-lined soakage wells occur in clusters and singly. The remains of a smith's workshop contained a furnace and a heap of agate beads, some of them not finished.

Toys of baked clay, including carts, animals, birds and human figurines and ivory or bone pendant with carved dots simulating a female deity are some of the other objects of Pd III. The upper levels of this Pd witnessed the rule of the Mauryas. Stamp of skilled Mauryan craftsmanship is seen on a polished ring-stone [12.3] minutely carved with figures and motifs suggesting the worship of the goddess of fertility. Examples of ivory carving are provided by the base of a pedestal, a stopper with a procession of elephants, combs, hair-pins and antimony rods [18.1]. An ivory seal is inscribed in Brāhmī characters with the legend *Bhadapālakasa*.

Copper continued in use. In addition to small objects like antimony rods, nail-parers and nails and pins, it was also used for dining utensils, such as the flat dish (*thālī*) and small bowl (*kaṭorī*), both simulating the shape of contemporary earthenware. The fragmentary hollow handle of an unidentified copper object is surmounted by an elegant figure of the mother goddess [12.6]. The rapid advancement in iron technology is evidenced by the large quantity and variety of objects.

Copper bar coins, punch-marked coins of copper and

silver and cast coins of silver [23.1] provide testimony of the numismatic beginnings and progress of trade. Altogether it is in this Pd that the life-pattern is urban once again after it had become extinct with the disappearance of the Harappans.

Apart from other stylistically datable objects two ¹⁴C dates from Pd III fit fairly well into the suggested chronology. One of them from the lower levels of the Pd is 485±100 B.C. and the other one from close to the upper levels is 390±105 B.C. Possibly the latter specimen had been redeposited in the upper levels from a lower level.

Pd IV. The beginnings of Pd IV are identified more easily by the terracotta art forms than by new fabrics and types in pottery, although these do exist. The long span of Pd IV, from c. 200 B.C. to A.D. 700, is divided into four Sub-pds corresponding roughly to the rule of the Śuṅgas (IV A), Śaka-Kushans (IV B), Guptas (IV C) and the post-Guptas (IV D). Nude *yakṣa* figures with cherubic expression and wearing rich ornaments and beautifully modelled figures of *yakṣīs* standing under trees are among the terracotta cult images of the Śuṅga period. Plain red ware and some grey ware are typical of Pd IV A. The pear-shaped vase with rim section approximating to a vertical lozenge and pitcher with fluted neck and out-turned rim are among the popular ceramic types. Potter stamped with motifs like *svastika*, *nandipada*, *tri-ratna*, human figure, fish, conch, etc., appears but becomes more prolific in the succeeding Sub-pd.

Coinage now comes fully onto its own. A coin of the Indo-Bactrian Antialcidas, another of the nameless, possibly Indo-Parthian, ruler with the title of Soter Megas and a clay mould made from a coin of Apollodotus II bespeak at least contact with the dominions of the Indo-Bactrians and Indo-Parthians. Contemporary tribal coinage is represented by the coins of the Kunindas and Audumbaras, the latter in a fair frequency, suggesting that Ropar may have been a centre of the Audumbara authority.

Sub-pd IV B is heralded among other art vogues by the Kushan human figurines in terracotta with fine folds of drapery. An interesting example of the bronze art is provided by a figure of a Brāhmaṇa, wearing the sacred thread (*yajñopavīta*) on the body and turban of the head. Characteristic shapes in red ware that came into vogue now are: the flattish cooking pan with lugged or looped handle; lid with 'inkpot' type holder [20.2]; bowl with slightly incurved pointed rim; carinated cooking pot (*hāṇḍī*) with externally beaked rim; tumbler, often with constricted waist and sagger base below carinated lower profile; and the long-necked hole-mouthed sprinkler. Some of the sophisticated pedestalled cups suggest Greek influence, as seen in similar pottery at Taxila.

The coinage of the Mathura satraps is represented by the issues of Hagamāsa and Rājuvula and of the Kushans by those of Kadphises II, Kanīška, Huviška and Vāsudeva. There are also a large number of imitation Kushan coins.

Gupta art stamp on two fragmentary stone plaques, one portraying elephants and another showing realistically a stag-hunting scene, perhaps to be identified with king Duśyanta's hunt, introduced Sub-pd IV C. Terracotta figurines are not many but include an extremely beautiful figure of a maiden playing on the *vinā*. Another example of a well-balanced Gupta craftsmanship is supplied by a set of three silver utensils of ritualistic fire-feeding use (*homa*). These comprise a ladle, a spoon with handle of entwined rod and a pedestalled bowl with fine chased decoration. The ladle and the bowl have parallels in terracotta as well, and it is likely that the particular shape of the bowl may have been influenced by Hellenistic *kantharos*; variants of which in bronze and silver have been found at Taxila. A bronze disc with perforated boss at the back, showing a winged griffin, again recalls such representation on stone tablets at Taxila. Typical of the pottery of the Sub-pd are votive tanks [12.11], lids with lamps on rim and an elegant flask with handle of entwined rope design.

Gupta coinage is by no means less impressive. A gold coin of Candragupta-Kumāradevi type, complete with the legend *Candragupta*, is a fine specimen. A hoard of 660 copper coins found in an earthen pot in Sub-pd IV D levels contains issues ranging between c. 200 B.C. and A.D. 600. Among these are copper issues of Candragupta II and several coins with the legend *Vidisagu*, which may perhaps be the corrupt or incomplete name of a local potentate contemporary with the Guptas. Another coin with rude Sassanian fire altar which occurs in large numbers in the hoard and also in regular layers is perhaps an issue of a local ruler. Coins of Toramāna and Mihirakula also occur in IV D levels.

Pds V and VI. About A.D. 700 perhaps there was a very short desertion of the site. The people reoccupied the site, but the new habitation was mainly on the s. mound, which is now covered by the present town. The remains of Pds V and VI have been probed on a limited scale by sinking a trench in the courtyard of a house in the town. The excavation laid bare several houses of kiln-burnt brick one above the other bespeaking considerable prosperity.

Among the pottery types of Pd V are the jar with mace-headed or internally beaked rim and ribbed neck; carinated cooking pot (*hāndī*) with out-turned rim; bowl-cum-lid with internal carination; and handled incense-burner [12.2]. Glazed polychrome ware is found in top fillings. Walls of *lakhauri* bricks, dated to the

Mughal times, peep out of the exposed sections of the s. mound. A kiln of the *lakhauri* bricks is located at the n.-w. corner of the n. mound. A coin from the top fillings belongs to Mubārak-Shāh, Sultān of Delhi (died 1434), while another coin from the surface belongs to Ibrāhīm Lodi II (1517-26).

Agrawal, D.P., & Kusumgar, S., 1974, *Prehistoric Chronology & Radiocarbon Dating*, New Delhi. Sharma, Y.D., 1956-6, in *Lalit Kālā*, 1-2, pp. 21-9.—Y.D. SHARMA

Ror, Dt Kangra. Lower Palaeolithic [4.2] and Neolithic [4.6.2] site.

Sankalia, H.D., 1962, *Prehistory & Protohistory of India & Pakistan*, Bombay, 16-20.

Rorawala, Dt Ganganagar. Rang Mahal [11.24] site in the SARASVATĪ VALLEY.

Unpublished.

Rosanuru, Dt Nellore. Lower [4.2] and Middle Palaeolithic [4.3] site.

IAR 1968-9.

Roshini, Dt E. Nimar. Tools of Series II (Middle Palaeolithic [4.3]) and microliths (of unspecified nature).

IAR 1961-1.

Rotegaon-Gerpāl, Dt Ahmadnagar. Sherds of thick grey ware.

IAR 1960-1.

Ruamgarh. See DHALBHUM.

Rudauli, Dt Mirzapur. Black-and-red ware [11.6.3] and NBPW [11.16].

IAR 1962-3.

Rudavli, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1966-7.

Ruhania, Dt Shahdol. Tools of the Early and Middle Stone (Lower and Middle Palaeolithic [4.2, 3] Ages.

IAR 1962-3.

Ruhallahpur, Dt Bulandshahr. Early historical [4.18.1] and medieval site.

IAR 1963-4.

Rui Chatrapati, Dt Ahmadnagar. Tools of Series II (Middle Palaeolithic [4.3]), microliths (of unspecified nature) and sherds of thick grey ware.

IAR 1960-1.

Rukhi, Dt Sonapat. Pre-Harappa [4.8] site comparable with late SISWAL.

Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 125.

Runjia, Dt Ujjain. Site yielding Kayatha Ware [11.7].

Arch. Congress & Seminar, 1972, Kurukshetra, 1976.

Runkhera, Dt Ujjain. Early historical [4.18.7] site.

IAR 1971-2.

Runmali, Dt Dhule. Chalcolithic [4.14.6] habitation site.

IAR 1964-5.

Rupanagudi, Dt Kurnool. Chalcolithic [4.14.7] site yielding black-painted red pottery and early historical remains [4.18.11].

IAR 1964-5.

Rupar. See ROPAR.

Rupawali, Dt Udaipur. White-painted black-and-red ware [11.6.2] site in the Berach valley.

IAR 1962-3.

Rupeta, Dt Ujjain. Historical site (of unspecified nature).

IAR 1971-2.

Rupnagar. See ROPAR.

Rupore, Dt Parbhani. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1960-1.

Rur, Dt Bhind. Microliths (of unspecified nature) and coarse red pottery.

IAR 1958-9.

S

Sabania, Dt Bikaner. Two flat copper celts [4.11] with concave sides and splayed-out cutting edges.

IAR 1968-9.

Sabdulpur, Dt Saharanpur. OCW [11.5] site.

IAR 1967-8.

Sabia, Dt Ranchi. Early Stone Age (Lower Palaeolithic [4.2]) tools like choppers, handaxes and scrapers in the valley of the Subarnarekha.

IAR 1964-5.

Sada, Dt Ahmadnagar. Microliths (of unspecified nature).

IAR 1958-9.

Sadabad, Dt Mathura. 16 copper axes [4.11], all unfinished, since they do not have sharp cutting edge.

Bull. Museums & Arch., 11-12, June-Dec. 1973, pp. 37-44: Indian Museum, Calcutta, collection. Also information from S. Asthana.

Sadalaga, Dt Belgaum. Chalcolithic [4.14.8] site with remnants of an ash-mound [14.3].

P. B. Desai Felicitation Vol., 1971, Dharwar. Prof. Nilakanta Sastri Felicitation Vol., 1971.

Sadapur, Dt Raichur. Megalithic [4.17.8] site with cairn circles.

Jour. Geological Survey of Hyderabad, 3, 1, pp. 76-82.

Sadayanpalaiyam, Dt Coimbatore. Megalithic [4.17.9] site with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Sadhauli, Dt Saharanpur. PGW [11.14] site.

IAR 1968-9.

Sadhora, Dt Ambala. PGW [11.14] site.

ASI-AR, 14, pp. 72-5, *IAR 1963-4*. Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 123.

Sadibad-ki-Kot, Dt Ghazipur. Early historical [4.18.1] site.

Bharati, 8, 1, 1964-5, p. 126.

Saduwa, Dt Panna. Early Stone Age (Lower Palaeolithic [4.2]) tools were collected from the bed of a nullah near Saduwa bridge on Navgaon-Panna road.

IAR 1961-2. AI, 17, 1961, pp. 5-36.

Safidan. See YAMUNA RIVER.

Sagar, Dt Sagar. A rich Palaeolithic [4.2] site and 10 rock-shelters [13] were noticed about 10 km to the w. of Sagar. Two groups of rock-shelters with paintings in red ochre were discovered near Nariavli, 13 km from Sagar. Several microlithic tools were collected from the vicinity of Sagar, fluted cores, crescents and trapezes, variously in agate, chalcedony and jasper, forming in main bulk,

the largest number coming from Chandala Bhata, a large site 3 km from Sagar. At a distance of 24 km e. of Sagar along the Rehli road 7 rock-shelters were found on the banks of the rivulet Gurar-Dahar. A few microliths but no pottery were found at the new site of the Univ. of Sagar.

IAR 1958-9; 1959-60; 1960-1; 1964-5.

Sagar-Bhanga, Dt Burdwan. Microliths (of unspecified nature).

IAR 1960-1.

Sagardih, Dt E (?) Champaran. Excavation at the mound revealed the remains of two *stūpas*, one assignable to the 9th or 10th century and the other one earlier.

ASI-AR, 16, pp. 19-23. *ASI-AR Bengal Circle 1902-3*, p. 6.

Sagauna, Dt Jabalpur. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1963-4, p. 88.

Sagileru Project, Dt Cuddapah. Early, Middle (Lower, Middle Palaeolithic [4.2, 3]) and Late Stone Age (Mesolithic [4.5]) tools.

IAR 1964-5.

Saguna, Dt Palamau. A flat celt of copper.

Jour. Bihar & Orissa Res. Soc. 1, 1915, p. 125.

Sagunghat, Dt Narsinghpur. Early and Middle (Lower and Middle Palaeolithic [4.2.3]) Stone Age tools.

IAR 1962-3.

Sagwan¹, Dt Hissar. Early historical [4.18.1] site.

Silak Ram, 1972, unpublished thesis, Kurukshetra Univ.

Sagwan², Dt Jabalpur. Microliths (of unspecified nature).

IAR 1962-3.

Sahajpuri, Dt Jabalpur. Microliths (of unspecified nature).

IAR 1957-8.

Sahari, Dt Midnapur. Microliths and flakes (of unspecified nature).

IAR 1961-2.

Saharjora, Dt Bankura. Microliths (of unspecified nature).

IAR 1960-1.

Sahasradhara Nala, Dt E. Nimar. Lower Palaeolithic [4.2] tools.

Sankalia, H.D., 1974, *Prehistory & Protohistory of India & Pakistan*, Poona, p. 116.

Sahd-Karar, Dt Raisen. Lower Palaeolithic [4.2] and Malwa Ware [11.10] site.

IAR 1966-7.

Sahebganj, Dt Santal Parganas. Pointed-butt polished

stone axes.

Brown, J.C., 1917, *Catalogue of Prehistoric Antiquities in the Indian Museum, Calcutta*, Simla.

Sabeth-Maheth. See ŚRĀVASTĪ.

Sahodarsthan, Dt W. Champaran. Stone images assignable from the early historical to Pāla periods were found on a mound.

IAR 1960-1.

Sahuwala, Dt Ganganagar. Rang Mahal [11.24] Ware and a terracotta bead and ball in the SARASVATĪ VALLEY.

Unpublished.

Saidabad, Dt Ghazipur. Site yielded Black-slipped [11.13] Ware of RAJGHAT² affinity.

IAR 1962-3.

Saidanganallur, Dt Tirunelveli. Neolithic [4.6.10] site yielding a small oval scraper of basalt in the Tambaparni valley.

Footte, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Saidnagar, Dt Dhule. Chalcolithic [4.14.6] habitation site.

IAR 1964-5.

Saigarh, Dt Aligarh. PGW [11.14], Black-slipped Ware [11.13], red ware of the Śuṅga-Kushan period and medieval ware.

IAR 1966-7.

Sailana, Dt Ratlam. Acheulian tools [4.2] comprising cleavers.

IAR 1970-1.

Saini (29°2'; 74°47'), Dt Meerut. Site with PGW [11.14] followed by NBPW [11.16].

AI, 10 & 11, 1954 & 1955, p. 145.

Sainpal-1 and -2 (29°37'; 74°42'), Dt Hissar. Rang Mahal [11.24] site.

IAR 1967-8.

Saipai (26°27'; 78°58'), Dt Etawah, 18 km n. of Etawah town, where a Copper Hoard [4.11] consisting of celts, harpoons, spearheads, anthropomorphic figures and rings was discovered by a cultivator. The writer recovered all the objects and noticed sherds of the OCW [4.12] at the site. Trial operations started by the writer on behalf of the ASI brought to light a hooked sword and more specimens of the OCW. A later operation in the same year under B.B. Lal assisted by the writer yielded a large quantity of the same ware. In 1970-1 excavation of an area of 20×20 m by the writer, again under the direction of Lal, produced not only the OCW but a barbed harpoon at a depth of 45 cm. Resumed excavation in 1972, covering an area of 30×20 m, produced a chert blade and fresh shapes in the OCW (IAR 1969-70, p. 40; 1970-1, p. 38; 1971-2, p. 46).

The pottery falls under the category of the OCW and pale-red ware, mostly in fragments but with a few complete pots as well. The pottery sometimes bears traces of red slip and in one case black painting on an incised

sherd. The shapes are: the vase with flaring or horizontally splayed-out rim; jar with flaring rim; deep bowl with straight or incurved rim; basin; miniature vase; and bowl. Besides, various types of handles, spouts, lipped bowls, a knobbed lid and a stem suggestive of the dish-on-stand or a ring-stand are noteworthy. The incised decorations executed by a sharp point on the exterior of pots are rows of dashes or series of triangular compartments enclosing rows of dashes, punched circlets or criss-cross or check patterns. The pottery has little in common with that of BAHADRABAD and AMBKHERI but has striking similarity in texture, shapes, technique and appearance with that from HASTINĀPURA, ATRANJIKHERA, AHICCHATRA and LAL QILA.

The other notable finds are two fragmentary blades of chert, a flake of chalcedony, querns [6.19], pounders, pellets and balls or sandstone. There are a few bones of *Bos indicus* and a fragment of clay suggestive of brick. Reed impressions on lumps of clay indicated some sort of wattle-and-daub construction.

Saipai is a single-culture site with sherds and other objects interspersed in a yellowish compact clay deposit overlying the natural soil. It has confirmed the surmise that the Copper Hoards were associated with the OCW people.

Lal, B.B., 1972, in *Antiquity*, 56, 282-7, —L.M. WAHAL.

Saitana, Dt Dhule. Middle Stone Age (Mesolithic [4.5]) site. Chalcolithic [4.14.6] habitation and burial remains were also found.

IAR 1961-2.

Saiyad, Dt Gurgaon. PGW [11.14] site.

Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.

Sajitra, Dt Kheda. Early historical [4.18.2] site.

IAR 1971-2.

Sakala, Dt Gurdaspur. Black-slipped Ware [11.13], black-and-red ware (of unspecified nature) and grey ware.

IAR 1961-2.

Sakarpatal, Dt Surat. Early, Middle (Lower, Middle Palaeolithic [4.2, 3]) and Late Stone Age (Mesolithic [4.5]) site.

IAR 1967-8.

Sakera, Dt Chhatarpur. Late Stone Age (Mesolithic [4.5]) site.

IAR 1965-6.

Sakhaji-ka-Tila, Dt Kurukshetra. Remains of a temple-complex of the Gurjara-Pratihāra period.

Kurukshetra, Univ. Res. Jour. (Arts & Humanities), 10, 1976, pp. 28-9.

Sakharpa (73°41'; 16°59'), Dt Ratnagiri. A unifacial chopper [4.2] was obtained on the right bank of the Kajvi Nadi.

Arch. Congress & Seminar, Nagpur, 1972, p. 50.

Sakhitara, Dt Mathura. PGW [11.14] sherds were found close to Govardhan.

IAR 1955-6.

Sakkarepatna, Dt Chikmagalur. Megalithic [4.17.8] site with stone circles.

Seshadri, M., 1960, *Report on the Jadigenahalli Megalithic Excavations*, Bangalore.

Sakra, Dt Jabalpur. Microliths consisting of blades, crescents, scrapers and cores.

IAR 1958-9.

Sakri¹, Dt Dhule. Palaeolithic site [4.2]. See KIRVADA. Also microliths and sometimes neoliths were found in association with the black-on-red painted pottery alongside a coarse grey ware similar to that from the Chalcolithic [4.14.8] levels of BRAHMAGIRI and BAHAL.

IAR 1957-8.

Sakri², Dt Jabalpur. Microliths consisting of blades, crescents, scrapers and cores.

IAR 1958-9; 1960-1; 1968-9.

Sakrigarha, Dt Jabalpur. Middle Palaeolithic [4.3] site.

IAR 1968-9.

Sakvad, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1966-7.

Salaia, Dt Jabalpur. Lower [4.2] and Middle Palaeolithic [4.3] site.

IAR 1968-9.

Salaiddih, Dt Mirzapur. Upper Palaeolithic [4.4] site with blades, points, scrapers and burins.

IAR 1970-1.

Salargarh, Dt Basti, 200 m e. of Piprahwa, with an excavated monastery of the Kushan period and a *stupa* to its n.

Srivastava, K.M., 1978, *Kapilavastu*, Nagpur.

Salarpura, Dt Saharanpur. Harappa [4.9] site.

IAR 1965-6.

Salaura (39°17'; 76°47'), Dt Rupnagar, formerly in Dt Ambala, about 6 km s.-w. of Rupnagar town, the present village, approximately 280 m e.-w. and 32 m n.-s. covering the ancient habitation. Situated as it is only about 275 m e. of BARA and since it had yielded PGW [11.14] sherds in surface exploration, some trial trenches were laid in the unencumbered e. slopes of the mound in order to ascertain if some light could be shed on the Harappa-PGW relationship beyond what had been adjusted at ROPAR (IAR 1954-5, p. 9). Overlying the natural strata of sand, *kankar* stone and compact clay from bottom upwards, the occupational debris rises here to a height of 4.88 m divisible into three Pds, PGW, Kushan and late medieval. There being no BARA ware at Salaura and no PGW at BARA, although the two mounds almost embrace each other, it is clear that the BARA and PGW people had not come into contact with each other here.

Pd I, PGW, has a 30 cm thick deposit mingled with the Black-slipped Ware [11.13] and red ware of the same general shapes as at ROPAR II. The only other object

from this level is a bone bangle. No structure has been met with.

Pd II, Kushan, 30 cm thick again, has yielded pottery of ROPAR IV B type. A fragmentary single-course floor of *kankar* stone, its extant size being 2.03 m by 70 cm, has also some reused baked bricks falling into the sizes of 5×7.5 to 12.5×10 to 15 cm. A solitary kiln-burnt brick measuring 10×15×40 cm, although found in a Pd III level, may have belonged to a structure of Pd II. Unidentified pieces of both copper and iron, a fragment of glass and bone points are among the few recovered objects.

In Pd III, late medieval, the site shows signs of some prosperity, judging from the housing activity. Although no structure proper has been found in the lower levels of the Pd four phases of structural activity are evidenced in the upper levels. These structures mostly found in parts in the small excavated area are built of *kankar* stone with occasional use of *lakhauri* bricks in repairs. These bricks are in two sizes, 4.8×21×41 cm and 3.75×10 to 11×20 to 22 cm. Objects of everyday use found from this Pd are not many but include an iron nail, a copper ring, bangles of terracotta, ivory and glass and beads and animal figurines of terracotta.

—Y.D. SHARMA

Salboni, Dt Purulia. Microliths (of unspecified nature).

IAR 1963-4.

Salebhatti, Dt Chanda. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1961-2.

Salel, Dt Ratnagiri. Unrolled flakes of the Early Stone Age (Lower Palaeolithic [4.2]) and scrapers and flakes, which from a technological viewpoint bear a close relationship to the Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1970-1.

Salempur, Dt Bulandshahr. PGW [11.14] site.

IAR 1965-6.

Salempur-Bhokri, Dt Saharanpur. OCW [11.5] and PGW [11.14] site.

IAR 1966-7.

Salempur Mahdud, Dt Saharanpur. OCW [11.5] and red ware of the Sunga-Kushan assemblage.

IAR 1965-6.

Salempur-Perhina, Dt Mainpuri. PGW [11.14] and NBPW [11.16] site.

IAR 1961-2.

Salera, Dt Udaipur. Microliths (of unspecified nature) in the Karanpur-ki-nadi valley.

IAR 1962-3.

Salgi, Dt Ranchi. A small chisel of gneiss.

Roy, S.C., 1916, in *Jour. Bihar & Orissa Res. Soc.*, 2, p. 67.

Salgundi, Dt Bijapur(?). Early and Middle Palaeolithic [4.2, 3]) tools.

IAR 1963-4.

Salidana, Dt E. Nimar. Tools of Series II (Middle

Palaeolithic [4.3]) and microliths (of unspecified nature).

IAR 1960-1.

Salihundam (18°28'; 84°3'), Dt Srikakulam, 7 km w. of Kalingapatna, with remains of a Buddhist *saṅghārāma* that flourished continuously from c. 3rd century B.C. to c. 8th century A.D. on the summit of a low hill. It was excavated A.L. Longhurst (*ASI—AR 1919-20*, p. 35), when structural remains of *stūpas*, *vihāras* and Tantric Buddhist images like *Mārici*, *Tārā*, etc., were found. Excavation by the writer in 1954 (*IAR 1953-4*, p. 11) has revealed three phases of occupation. The Early Phase (3rd-2nd century B.C. to 1st century A.D.), marked by a few brick platforms and some irregular lines of brick associated with a punch-marked coin [3.1] and the Megalithic Black-and-red Ware [11.15.3], besides other plain wares, was followed by the Middle Phase (1st-2nd century to 3rd-4th century A.D.), in which most of the monuments including the *mahā-caitya*, two smaller *stūpas*, two circular *caitya-gr̥has* housing stucco figures of Buddha, two such others with *stūpas* and several *vihāras*, all brick-built and provided with stone-paved approaches, came into existence. The material equipment comprised notably dishes of the Rouletted Ware [11.21], sprinklers of the Red Polished Ware [11.23] dull-red lamps, flat-based bowls with flaring sides, dishes and lids with flanged waist, terracotta arecanut-shaped beads and reel-shaped ear ornaments, inscribed conches (one mentioning the ancient name a *Śālipāsaka*), *Sātavāhana* coin, a *Purī-Kushan* coin, terracotta objects like seals, caparisoned horses and plaques with Buddha figures. The Late Phase (c. 4th-5th century to 7th-8th century) witnesses the construction of only a few votive *stūpas*, some random-rubble revetments and a pillared *maṇḍapa* built of material drawn from the earlier structures. Plain dull ware, wedge-shaped and moulded bricks, flat tiles, terracotta finials, beads of crystal and terracotta, stone images of Tantric Buddhist deities and six stone inscriptions of the 7th-8th century are the notable associated items of this phase. These three phases roughly mark the shifting of sectarian predominance of *Hinayāna*, *Mahāyāna* and *Vajrayāna*.

Salihundam was generally exposed to cultural influences from n. and s. as revealed from the material equipment displaying similarities with those from sites like *ARIKAMDU*, *BRAHMAPURI*, *NAGARJUNAKONDA*, *SISUPALGARH*, *TRIPURĪ* and *HASTINĀPURA*. But the solidly constructed *stūpas* without *āyaka* platforms or sculptured casing slabs show the greater influence of the n. tradition than that of the Andhra region. The stucco figures of Buddha are reminiscent of *Gandhāra* features. A remarkable feature of the site is the occurrence at all levels of a number of inscribed potsherds providing names of persons, places, etc., and some with drawings

of *vihāra* plans.

Subrahmanyam, R., 1964, *Salihundam, a Buddhist Site in Andhra Pradesh*, Hyderabad.—R. SUBRAHMANYAM

Salippapillaiyarnattam, Dt Madurai. Megalithic [4.17.9] habitation site with the Black-and-red [11.15.3] Ware.

IAR 1960-1.

Saliwada, Dt Jabalpur. Series II (Middle Palaeolithic [4.3]) tools.

Salori, Dt Allahabad. NBPW [11.16] site.

IAR 1960-1.

Salvadgi, Dt Bijapur. Series II (Middle Palaeolithic [4.3]) tools, microliths (of unspecified nature), sherds of thick grey ware, Megalithic [4.17.8] stone circles and early historical remains, the last characterized by the Black-and-red Ware [11.15.3] and red-slipped ware.

IAR 1960-1; 1965-6.

Samadhiala¹, Dt Bhavnagar. Early Stone Age (Lower Palaeolithic [4.2]) and Middle Palaeolithic [4.3] tools were collected from a calcreted older alluvial gravel from the site, 50 km w.-n.-w. of Bhavnagar. (Same as following?).

IAR 1970-1. Agrawal, D. P., & Pant, R. K., 1979, in *Man & Environment*, 3, p. 7.

Samadhiala², Dt Bhavnagar. Harappa [4.9] site. [Same as preceding?]. See PHULVADI.

IAR 1971-2.

Samadhiala³, Dt Surendranagar. Harappa [4.9] site 8 km—from RANGPUR.

IAR 1954-5.

Samagogha, Dt Kutch. Harappa [4.9] settlement.

AI, 18 & 19, 1962 & 1963, p. 188.

Samal, Dt Dhenkanal. Lower Palaeolithic [4.2] site.

Mohapatra, G. C., 1962, *Stone Age Cultures of Orissa*, Poona, 1962.

Samanattam, Dt Madurai. Urn burial site [4.17.9] without megalithic appendage. Russet-coated Painted Ware [11.22] and pottery painted with wavy lines were also found.

IAR 1956-7.

Samattivaram, Dt Madurai. Mound with remains of ancient habitation.

IAR 1957-8.

Samayanallur, Dt Madurai. Urn burials [4.17.9].

IAR 1957-8.

Sambargi, Dt Belgaum. Early historical [4.18.11] site.

Prog. Rep. Kannada Res. Inst., 1947-52, p. 2.

Sambaria, Dt Bharuch. Middle (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) site.

IAR 1969-70.

Sambhal, Dt Moradabad. NBPW [11.16]. Black-slipped Ware [11.13] and coarse red and plain grey wares.

IAR 1963-4.

Sambhar, Dt Jaipur, with an extensive mound on the bank of a dried-up lake, 7 km from the well-known Salt Lake, representing ancient *Śākambharī*, the capital of the Imperial *Cāhamānas* of the late historical period. A number of black stone sculptures of Brahmanical deities

have been found in the neighbourhood from time to time. The mound, 600 m from n. to s. and with an average width of about 550 m, was first excavated by Hendley in 1884 and then by Sahni in 1936-8. As excavated the mound yielded 45 separate small dwellings at six distinct levels ranging in date from the 3rd-2nd century B.C. to the 10th century A.D.

The small finds are numerous and varied. The recovered coins, nearly 200 in number, include six silver punch-marked [3.1], one of the Indo-Greek Antimachos Nikephoros and a few of the Kushans, Yaudheyas and late Indo-Sassanians. Gold is represented by a thin bead, perhaps an amulet, a leaf with a winged lion head in repoussé and a heart-shaped thin piece. The copper objects include a bell [6.3], small jars, a circular disc finger rings and ear rings, a long nail-extractor and an awl. Of the iron objects large hatchets, a cobbler's scraper, the mouth-piece of a bellow, double-edged daggers, sickles, chisels, crucibles [16.4]—all from a blacksmith's workshop—door accessories, ladles, hanging lamps [6.11] and a limited number of barbed arrowheads and spearheads deserve mention. Dicing was a favourite amusement: two cubical dice [6.7.1] of terracotta are marked with shallow holes one to six in number in a way that the sum of the holes on each pair of opposite sides total seven; others are however marked differently. The marks on ivory dice are concentric circles.

Terracotta figurines are both in the round and relief and seem to be of Śunga, Kushan and Gupta dates. Plaques of the same material also date from the same periods. There are a few hollow pendants made of double-stamped discs joined along the edges.

The published report does not say much about the pottery, far less about its periodwise classification. But the statement 'the glazing of pottery was practised in this ancient town from very early times' (Sahni, p. 52) could perhaps refer to the NBPW [11.16] or early Christian glazed ware [11.26].

Hendley, T.H., 1885, in *Jour. Royal Asiatic Soc.*, 17, 1. Sahni, D.R., no date, *Arch. Remains & Excavations at Sambhar*, Jaipur.—A GHOSH

Sambhi, Dt Karnal. Sambhi-1 is a PGW [11.16] site, while Sambhi and Sambhi-2 are late Harappa [4.10] sites comparable to MITATHAL II B.

IAR 1966-7, p. 14. *Haryana Studies in History & Culture*, p. 139. Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 125.

Sambhudevanapur, Dt Mysore. Megalithic [4.17.8] habitation site.

Information from C. Krishnamurthy through A. Sundara.

Samdari, Dt Bharmer. Site with Series II (Middle Palaeolithic [4.3]) tools on the Luni river.

IAR 1958-9.

Samdholi, Dt Sangli. Middle Stone Age (Middle Palaeolithic [4.3]) tools in a stratified pebble conglomerate in the Varna and Krishna valleys.

IAR 1971-2.

Samera-ghat, Dt Jabalpur. Middle Palaeolithic [4.3] tools from loose gravel.

Sankalia, H.D., 1974, *Prehistory & Protohistory of India & Pakistan*, Poona, p. 181.

Samipur, Dt Bijnor. PGW [11.14] site.

IAR 1957-8.

Samode, Dt Dhule. Chalcolithic [4.14.6] site with microliths (of unspecified nature) and black-painted red and burnished grey wares.

IAR 1962-3.

Samoor Kalan, Dt Una. Early historical [4.18.1] pottery and grey ware.

IAR 1970-1.

Sampapati Ammar temple, Dt Thanjavur. Early historical [4.18.12] site. See KĀVERIPUMPATTINAM.

IAR 1970-1.

Samsherpur, Dt Dhule. Palaeolithic tools and microliths (both of unspecified nature).

IAR 1958-9.

Sanalo (22°12'; 70°25'), Dt Jamnagar. Lustrous Red Ware [11.19] site corresponding to RANGPUR II C and III.

AI, 18 & 19, 1962 & 1963, p. 207.

Sanaoda, Dt Ujjain. Early historical [4.18.9] site.

IAR 1971-2.

Sanapur, Dt Raichur. Megalithic cairn circles [4.17.8].

IAR 1962-3.

Sanapur-Padsa, Dt Chanda. Extensive site between the villages Sanapur and Padsa in the Wardha river-basin yielding tools of the Early and Middle Stone (Early and Middle Palaeolithic [4.2, 3]) Ages.

IAR 1962-3.

Sanavasapuram, Dt Bellary. Neolithic [4.6.9] site.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, pp. 77-8.

Sanchi (23°28'; 77°48'), Dt Raisen, with impressive Buddhist remains ranging in date from the 3rd century B.C. to the 12th century A.D., situated on a low hill-top, anciently known as Vedisa-giri (due to its proximity to Vidiśā, BESNAGAR) Cetiya-giri, Kākanāda-boṭa and Bota-śrī-parvata. The main *stūpa*, *Stūpa* 1, the outstanding monument on the hill, is believed to have been built by Aśoka in the 3rd century B.C., and one of his queens is said to have built a monastery here. Aśoka set up one of his pillars near his *stūpa*, surmounted it by a four-lioned capital and had his anti-schism edict inscribed on it. Evidently the *stūpa* enshrined the relics of Buddha which have however not been recovered. In the next century the brick *stūpa* was encased in stone, doubling the size of the original *stūpa*, the remains of which now lie hidden under the stonework. Balustrades, of a series of uprights with lenticular cross-bars and capped by large copings, were added on the ground level at a short distance from cylindrical *medhi* (tall base) and

around the terrace of the *aṇḍa* (near-hemispherical dome) approached by a double flight of steps on the s. and the flattened top of the *aṇḍa* was crowned by a triple umbrella set up at the centre of a heavy stone box within a square railing. The members of the balustrades are inscribed with donative records in Brāhmī [20.4.2] of the 2nd century B.C. Another century later imposing gateways, elaborately carved variously with scenes of the life of Buddha and of his previous births (*jātakas*), events of the subsequent history of Buddhism, scenes relating to the Mānusi-Buddhas and miscellaneous scenes and decorations, were set up at the cardinal directions. The carvings, lacking the sophistication of the later ages, nobly illustrate the early stages of Indian sculptural art.

On a lower terrace to the n.-w. of Stūpa 1 stands Stūpa 2, a simpler structure without gateways but with the components of the ground balustrade bearing inscriptions in comparable script and of comparable contents.

The third notable *stūpa*, Stūpa 3, stands to the n. of Stūpa 1 and is similar in size to Stūpa 2.

With Stūpa 1 as the nucleus the hill-top witnessed a brisk building activity—of votive *stūpas*, temples and monasteries, all enclosed in a compound wall—which continued up to the 12th century. To enter into further details about the three *stūpas* and other structures and the sculptural art would be going beyond the scope of the present work.

Attention to the ruins was first drawn in 1818, and for a long time since then they suffered deprecation at the hands of amateur archaeologists and treasure-hunters. In 1851 A. Cunningham and F.C. Maisey excavated Stūpas 2 and 3 and recovered relics therefrom, but a shaft in the centre of Stūpa 1 failed to reveal any (perhaps they had disappeared in one of the previous operations). Preservation of the *stūpas* was done in 1881 and the following years by H.H. Cole. But to expose the other structures, preserve them meticulously and build up a proper history of the monuments was left to John Marshall of the ASI between 1912 and 1919.

It has been stated above the Stūpa 1 did not yield any relics. But Stūpa 2 enshrined a relic-box with an inscription proclaiming that it contained the relics of many teachers. Inside the box were found small relic caskets [12.8] inscribed with the names of ten saints whose charred bones were enshrined within. Stūpa 3 had a relic chamber with two small boxes with the relics respectively of Śāriputra and Mahāmaudgalyāyana, two of the principal disciples of Buddha himself.

Considering that Sanchi during its lifetime had all along been a secluded monastic establishment, objects of material interest found here, perhaps mostly in Marshall's operations and now preserved in the local Museum, are not inconsiderable in number and variety, though the context of their find is not always recorded.

Thus there are: iron spearheads(?), arrowheads including barbed ones, daggers, bells, cooking vessels, bowls, knife blades, razors, vegetable cutter, a needle, an antimony rod [18.1], a ferrule, a stirrup, ploughshares, sickles, pincers, an anvil, a hammer, wedges, chisels including a socketed one, awls, a trowel, locks and keys [6.12], nails and other door accessories and other objects of uncertain use; bronze bowls, bangles, bracelets, finger rings, pendants and a bell; and copper cooking vessels, bells, a bangle, finger rings, an ear-cleaner and an antimony rod. The terracotta objects are mostly of Buddhist affiliation.

A vessel contained 41 base silver coins all of the W. Ksatrapas—Rudrasena I, Rudrasena II, Bhatrāmān, Rudrasimha II, Rudrasena III and other unidentified ones—bespeaking an early 4th-century burial of the pot.

Of pottery no specific information in present-day terminology is available, but an on-the-spot examination may reveal some recognizable wares. Mention is made of 'early glazed pottery', about the 3rd century B.C. to the 1st century A.D. (Hamid *et al.*, 1922, p. 52), but while the early glazed Kushan pottery is invariably green-blue in colour [11.26], all the specimens here are red. Perhaps they are pieces of what would not be called the Red Polished Ware of the early centuries A.D. [11.23]—a guess supported by the mention of *surāhis*, spouts, etc., all characteristics of that Ware. There are potter's dabbers [16.11] and spindle whorls [6.25]. Said to be of 'Gupta and medieval periods' are the *hāndī*, water jar, jug, mica-dusted saucer, lid, some with a 'boss at the centre to serve as a handle', cup, lamp, inkpot [20.2], etc. A comparatively recent count of the distribution of NBPW [11.16] (R.E.M. Wheeler and Krishna Deva in *AI*, I, 1946, p. 56) includes Sanchi.

Burgess, J., 1902, in *Jour. Royal Asiatic Soc.*, pp. 24-55. Cunningham, A., 1854, *Bhilsa Topes*, London. Hamid, M., Kak, R.C., & Chanda, R., 1922, *Catalogue of the Museum of Arch. at Sanchi, Bhopal State*, Calcutta. Maisey, F.C., 1892, *Sanchi & its Remains*, London. Marshall, J., 1940(?), *Monuments of Sanchi*, 3 vols, Delhi. Mirta, D., 1957 & subsequent eds., *Sanchi*, New Delhi, 1971, *Buddhist Monuments*, Calcutta, pp. 96-9—A. GHOSH

Sand, Dt Ambala. Late Harappa site [4.10] comparable with MITATHAL II B.

Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 124.

Sand, Dt Bhilwara. Series I (Lower Palaeolithic [4.2]) tools.

IAIR 1959-60.

Sandeh, Dt Ambala. Harappa Ware [11.3]. (Same as following?)

IAIR 1963-4.

Sandai, Dt Ambala. Ochre-coloured Ware [11.5] site. Some typical Harappa forms [11.3] like the dish-on-stand, knobbed lids and storage jars were also found. (Same as preceding?)

IAIR 1965-6.

Sandhal Kalan, Dt Rohtak. Site with grey ware and early historical [4.18.1] material.

Jour. Haryana Studies, 3, 1, p. 6.

Sandhaya, Dt Ambala. Harappa [4.9] and OCW [4.12] site. (Same as SANDEH, SANDHAI?)

Vishveshwarananda Indological Jour., 9, 2, p. 384.

Sandia, Dt Hoshangabad. Flake and blade tools.

IAR 1960-1.

Sandim (29°5'; 86°38'), Dt Mayurbhanj. See KULIANA. **Sangam**¹, Dt Akola (?). Tools of both Series I and II (Lower and Middle Palaeolithic [4.2, 3]) were found. A completely silicified piece of wood was also collected from the earlier gravel bed, perhaps the first recorded occurrence of fossil wood in the Deccan.

IAR 1955-6.

Sangam², Dt Bijapur. Middle Palaeolithic [4.3] site.

Pappu, R.S., 1974, *Pleistocene Studies in the upper Krishna Basin*, Pune, p. 33.

Sangam³, Dt Nagpur. Megalithic [4.17.6] site.

IAR 1961-2.

Sangammer, Dt Ahmadnagar. Microlithic (of unspecified nature) site. See PRAVARA VALLEY.

IAR 1953-4.

Sanganakallu, Dt Bellary, about 5 km to the n.-e. of Bellary. As early as 1872, W. Fraser, inspired by Foote's discovery of palaeoliths at PALLAVARAM, collected numerous neoliths from around N. Hill in the border area of Sanganakallu and KUPPUGALLU including celts and chisels and brought the site to the notice of the latter. Foote surveyed the area in 1884 and traced a large Neolithic settlement with celts, etc., of dolerite in very large numbers in various stages of manufacture; corn-crushers; five or six well-polished, parallel grooves 18 or 20 cm long and 2 to 3 cm deep close to one another within an area 50 cm on a rock-surface near by; flake tools such as scrapers; and iron slag, terracotta tuyère, etc. (Foote, 1916). Besides on the n. side of the hill are a number of rock-bruising earlier noticed by Hubert Knox, comprising figures of men, elephants, bulls, birds, stars, etc., ranging in date from the overlap phase of the Chalcolithic and Megalithic to modern times. Near the site are two ash-mounds [14.3] of scoriaceous slaggy ash.

After an extensive field exploration in an area of about 100 km with Bellary as the centre, Subbarao excavated the rich and promising site in the terrace of Sannarasamma hill at Sanganakallu in 1946 (Subbarao, 1948). The excavation revealed three phases: an industry of heavily patinated flake tool on dyke, basalt and quartz and microliths [4.5] in the lowest overlain by a weathered layer; Neolithic [4.6.9] divisible into two sub-phases—true Neolithic and Neolithic with Chalcolithic [4.14.8] elements such as red-painted black pottery, etc., in the middle phase; and the Iron Age Megalithic [4.17.9] with an overlap with early historical remains [4.18.10]. In 1965 the Deccan College and the

Univ. of Karnataka re-excavated the same area (*IAR* 1964-5, p. 29); in addition another area near by in the Bangaltota area and the undisturbed ash-mound were also excavated. Taken together these excavations, while confirming the previously established stratigraphy, have revealed further a Mesolithic phase [4.5] and a pre-Mesolithic horizon for the patinated flake tools and the stratigraphy of the ash-mound. Also a much disturbed small ash-mound on Saudamma hill and a rock-shelter [14.1.1] with paintings of cattle, etc., in red ochre have been noticed. All these investigations have revealed a sequence of cultures from the pre-Mesolithic to the early historical periods and their respective salient characteristics.

The assemblage of tools of the pre-Mesolithic phase occurring in the lower red *murram* in the Bangaltota area comprises flakes, cores, heavy tools and waste flakes of basaltic dyke, indicating the employment of prepared core technique [16.15.2] and representing an advanced stage upon the scraper-borer of the Middle Palaeolithic [4.3] but without blades and burins characteristic of the Upper Palaeolithic [4.4]. It is therefore regarded as probably a facies of the Middle Palaeolithic of the Andhra-Karnataka region. In the latter part of this phase tools of the types are made on quartz as well and are roughly contemporaneous with the earliest phase in the terrace of Sannarasamma hill.

The Mesolithic phase is characterized by microliths comprising irregular cores, thick core flakes, discoids, parallel-sided flakes, points, lunates, etc., all made on quartz found in sticky brown soil. The industry seems to have developed from the latter part of the pre-Mesolithic phase.

Of the true Neolithic phase is the striking discovery of a circular floor, paved with granite chips with post-holes at the edge and chunks of plastered clay, of a house with wall of wattle and bamboo screen and presumably conical roof. On it have been found a hearth formed by three blocks of stone with ash and charcoal, three edge-ground axes, a sling ball, a hammer-stone, in oval rubber-stone and two separate groups of four flat-topped stones, each obviously serving as bin-rests. The pottery is pale-grey, the burnished ware occasionally painted with red ochre and brown ware, the types being: the hemispherical bowl some with channel spout; vase with out-turned or out-curved rim; and vessel with perforations. In the Neolithic-Chalcolithic phase the pottery is mainly a coarse brown-and-black ware, besides burnished handmade ware in a small quantity; the vase with out-curved rim, some with spout; lid with knob; and thick-sectioned vase with finger-impressed or applied decorations on the edge and shoulder respectively. In the upper levels of this phase is also found red-painted black pottery including the high-necked jar with beaded

rim of late Jorwe fabric [11.11] on a very limited scale, evidently an intrusion from the Godavari valley.

The other remains of everyday use common to both the phases in varying degrees are: ground and in some cases polished stone tools such as axes, adzes, chisels, wedges; stone hammers, pounders and boat-shaped querns [6.19]; parallel-sided blades largely made on chert and chalcedony, microliths being only a few; and well-ground bone points and chisels. Some interesting objects are terracotta solid figurines, mostly bulls and birds. The animals that were used essentially for food are largely the cattle of large and small size, sheep or goats, antelopes and rodents. Skeletal remains of dogs are also present.

¹⁴C dates of charcoal samples from the debris above the hut of the earliest phase described above are 1590 ± 110 , 1585 ± 105 and 1550 ± 105 B.C. The probable beginning of the early Neolithic is therefore placed at c. 1600 B.C.

In the Megalithic phase overlapping with the Neolithic comprising Chalcolithic elements has been found the remnant of a stone enclosure wall of boulders, 1 m high, consisting of 5 courses, traced to a length of 4 m and breadth of 1.10 m, probably of a house. The pottery is essentially of three fabrics: all-black ware, Black-and-red Ware [11.15.3] and red ware. The chief types are the conoid of the first ware; the concave-sided carinated bowl, tulip-shaped bowl, and globular vase of the second; and the vase with externally beaded or thickened and grooved rim, some with oblique parallel incised strokes, of the third. A globular pot of the Black-and-red Ware has white painting on the shoulder all round consisting of sets of parallel oblique lines arranged in an inverted V way. There are no iron objects. The cattle and sheep continue to be in use.

The excavation of the ash-mound has disclosed two thin floors, layers 4 to 6, variegated banded ashy with contradistinctly thick layers, 3 and 5, of scoriaceous glassy slag alternately capped by two layers, 1 and 2, of light-brown ashy soil and whitish grey ash from the top. The second floor at the lowest rests on dark-brown compact soil profile, layer 7. Besides objects such as the Neolithic, the Megalithic and early historical pottery and ground stone axes from the topmost layer, two red and a coarse grey potsherds as well as a brown-and-black red ware respectively from layers 3 and 5, two highly calcined stone chunks with deep cracks from layer 3 and patinated flake tools made on mainly quartz of the latter part of the pre-Mesolithic phase from layer 7 are the few other objects. Laboratory analysis of the ash and slag indicates them to be due to burning of cow-dung at 900° - 950° C. and 1100° - 1250° C. Further the presence of quartz and felspar grains especially in the ashy layer 4 seems to suggest that the site was not actually of a

cow-pen but a heaping place for cow-dung, which goes against the cow-pen theory enunciated by Allchin on his findings from UTNUR. The ash-mound is assigned to the Neolithic phase.

Ansari, Z.D., & Nagaraja Rao, M.S., 1969, *Excavations at Sanganakallu*, Bellary, Poona. Foote, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras. Sankalia, H.D., 1965, *Pre-Mesolithic Industries from the Excavations at Sanganakallu*, Bellary, Poona. Subbarao, B., 1948, *Stone Age Cultures of Bellary*, Poona.—A. SUNDARA

Sangappadai, Dt Madurai. Urn burials, one of the disturbed ones having etched carnelian beads, were located.

IAR 1958-9.

Sangat Pura, Dt Jind. Harappa [4.9] site.

IAR 1966-7. Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 125.

Sanghel, Dt Gurgaon. PGW [11.14] and early historical [4.18.1] site.

Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.

Sanghi, Dt Rohtak. Pre-Harappa [4.8] site comparable with the Degenerate SISWAL.

Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 125.

Sanghol, Dt Ludhiana, on a dried-up course of the SUTLEJ in Tahsil Samrala ($30^\circ 48'$; $76^\circ 12'$), with a 25 m high mound with an area of 300 m sq, almost entirely occupied by the modern village. Four trenches were laid here by the Punjab Dept of Arch. and Museums, two of them, SGL-1 and SGL-3, on the w. and n. fringes of the Hathiawara mound and the other two, SGL-2 and SGL-4, on the w. and s. fringes of the main mound (IAR 1968-9, p. 25; 1969-70, p. 31; 1970-1, p. 30). Of them SGL-2 provides a complete eightfold cultural sequence.

In Pd I, excavated in a restricted area, were noticed mud and mud-brick structures clay bins and large jars. The main pottery is bright to buff in colour with a fine slip, the shapes being the dish-on-stand, dish, bowl, bowl-on-dish, beaker, medium and small dish, flat dish with short sides and roughened base and hollow ring-stand. Geometric and naturalistic designs painted in black, brown and mauve-purple are common, as also multiple combed wavy and zigzag lines above the waist portion of the pot. The bulk of the pottery is akin to the typical BARA ware, though the mid-level of the the Pd has some seemingly Cemetery H pottery. Some designs have analogues with SOTHI/KALIBANGAN I Ware [11.2], the cognateness of which to the BARA ware is now established. Two copper chisels of rectangular cross-section and slightly splayed edge, agate inlays, heart-shaped bangles or ear rings, of faience [16.6], bangles of faience, beads of steatite, faience agate and terracotta cakes [6.27] of lenticular section are the other noteworthy finds.

Pd II marks the arrival of the PGW [11.14] and associated wares. In one trench the Ware occurs right on

the natural soil and in another it overlaps with the NBPW [11.16].

Pd III has the NBPW and red pottery associated with it. Pd IV has Śāṅga terracottas, while Pd V has Indo-Parthian, Kushan and tribal coins, a terracotta coin mould of Gondophares, votive tanks [12.11] and sealings with early Gupta legend. Pd VI shows a massive mud rampart with a basal width of 29 m and with a flat top of yellow earth with *kankar* spread over it. Later on its height was raised and a moat was provided around it. The deposit against the wall has the Red Polished Ware [11.23], terracotta female figurines of Gupta tradition and a terracotta sealing with a legend in Gupta script. Pd VII, medieval, has glazed pottery and red ware, while Pd VIII has structures of *lakhauri* bricks.

An apsidal mound, 120×100 m in extent and 2 m high, excavated by the same agency in 1971-2 (*IAR* 1971-2, p. 39), has revealed the spoked plan of a Buddhist *stūpa* with an enclosure and a number of other structures. The brick spokes radiating from a central hub are intersected by three successive walls, the top of the peripheral one probably serving as the *pradakṣiṇā-patha*. There is no trace of the superstructure.

(It is learnt that excavation has been resumed at Sanghol, but the details are not known.)

—A. BANERJI.

Sangirpada, Dt Dhule. Microliths (of unspecified nature).

IAR 1960-1.

Sangli, Dt Sangli. Tools of the Middle (Middle Palaeolithic [4.3]) and Late Stone (Mesolithic [4.5]) Ages.

IAR 1962-3.

Sangolgi, Dt Bidar. Early historical site.

Karnataka Bharati, 11, 3.

Sangur, Dt Dharwar. Early historical [4.18.11] site.

IAR 1958-9.

Sangvi, Dt Akola. Late Stone Age (Mesolithic [4.5]) site.

IAR 1965-6.

Sangwar, Dt Gulbarga. Chalcolithic [4.14.8] and Megalithic (?) [4.17.8] site.

IAR 1963-4. *Jour. Karnataka Univ.*, 4, pp. 183-200.

Sanjaigaram, Dt Chingleput. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAR 1966-7.

Sanjai valley. Neolithic celts, pottery and beads, besides some palaeoliths [4.2] and microliths (of unspecified nature) were collected from DUGNI, BARUDIH and UKRI. See CHAKRADHARPUR.

IAR 1972-3.

Sanjeet. See SANJIT.

Sanjimula, Dt Kurnool. Early historical [4.18.12] site.

IAR 1964-5.

Sanjit, **Sanjeet**, Dt Mandasaur. Chalcolithic [4.14.5] including Kayatha Ware [11.7] site. A recent loose gravel

on the Retam river yielded jasper tools of Series II (Middle Palaeolithic [4.3]) and handaxes and cleavers of quartzite and few discoids (Lower Palaeolithic [4.2]). Two Acheulian cleavers were found in the loose upper gravel in a well-stratified gravel between PASEWA and Sanjit.

IAR 1956-7; 1959-60; 1965-6. *Arch. Congress & Seminar*, 1972. Kurukshetra, 1976, p. 56.

Sankara, Dt Aligarh. Located on the w. bank of the Ganga, the mound is about 32 km e. of Atrauli. In the lowest levels PGW [11.14] was succeeded by red ware associated elsewhere with the NBPW [11.16] though no sherd of the NBPW was found. Śāṅga-Kushan remains and Gupta antiquities followed, whereafter the site was temporarily deserted. It was re-occupied in c. 9th-12th centuries. The latest occupation can be assigned to c. 15th-16th centuries.

IAR 1960-1.

Sankethan, Dt Agra(?). The site located midway between Nandgaon and Barsana yielded sherds of PGW [11.14] and NBPW [11.16].

IAR 1955-6.

Sankhanar, Dt Kutch. Rang Mahal [11.24] site.

AI, 18 & 19, 1962 & 1963, p. 187.

Sankisa, Dt Farrukhabad, on the Kalinadi, lying midway between ATRANJIKHERA and KANAUI, 40 km from either, called Sāṅkāśya in the *Rāmāyaṇa* and other Sanskrit texts, Sankisa in Pali texts and Song-kia-she or Kia-pi-tha by the Chinese travellers, where Buddha accompanied with Brahmā and Indra is said to have descended from the Trayastriṃśa heaven by a ladder of gold or gem, thus making the place a centre of Buddhist pilgrimage. Hiuen Tsang records the construction of ladders by the local princes at the site of the original ladder. He also saw at the site a monastery, a pillar of Aśoka, several *stūpas* and a *nāga* tank.

The present village is located on a mound measuring 400 m × 300 m × 12 m known as Qilab. Nearly 288 m due n. there is another mound of solid brickwork topped by a temple. Further 122 m from the temple-mound lies the elephant capital of the pillar of Aśoka, 'bell-shaped, corded or receded perpendicularly' with an abacus of honey-suckle and with Mauryan polish.

About 183 m to the e. of the temple mound is another mound, known as Nivi-ka-kot, measuring 183 × 52 m believed by Cunningham to be a monastery. In the n.-e. and s.-e. of this mound there are several small mounds thought to be *stūpas*.

The entire city comprising these mounds is enclosed by an earthen rampart, measuring 349 m in circuit, which, as Cunningham says, is a tolerably regular duodecagon having three openings, respectively on the e., n.-e. and s.-e.

The site has yielded the PGW [11.14] and NBPW [11.16] and its associated red wares (*IAR* 1955-6, p. 71).

The other finds include punch-marked coins [3.1] with small symbols, cast copper coins and coins of the Satraps of Mathura, Indo-Scythian rulers and Indo-Sassanians. An inscription engraved with sculpture representing a ladder with the figure of *bhikṣuṇī* Utpalā at the base and a plaque of soapstone, terracotta figures, a black-stone carving representing the *nirvāṇa* of Buddha, moulds of figures and stone dishes have also been found.

ASI—AR, 1, pp. 271-9; 6, pp. 22-31, Bajpai, K.D., 1955, *Yuga-Yugon se Uttar Pradesh*, Allahabad, p. 26.—R.P. SHARMA

Sannarasamma hill, Dt Kurnool. A large number of Neolithic tools [4.6.8] were collected from the top of the hill, near SANGANAKALLU, about 5 km n.-e. of Bellary. The collection included a few new types of Neolithic celts along with axe-like cores bearing a superficial resemblance to Acheulian handaxes [4.2]. The importance of this discovery lies in the fact that such cores are found at the flint factory sites at Sukkur and Rohri in Sind.

IAR 1959-60.

Sannatti, Samathi, Dt Gulbarga. Buddhist site dating between 1st century B.C. to 3rd century A.D. Exploration revealed a *stūpa*, which, but for its circular basement has been completely eroded. Antiquities included a piece of Rouletted Ware [11.21], Sātavāhana tile pieces, crystal and carnelian beads and shell bangles.

IAR 1966-7. *Quarterly Jour. Mythic Soc.*, 56, 1-4, pp. 35-7. *Jour. Karnataka Univ.*, 4, pp. 158-63.

Sanon, Dt Kanpur. NBPW [11.16] site.

IAR 1962-3.

Sanrigaon, Dt Ranchi. Burial ground and so-called Asura site [14.4]. Burial urns yielded bones, copper ornaments and beads.

S.C. Roy, 1915, in *Jour. Bihar & Orissa Res. Soc.*, 1, p. 247.

Santajutura, Dt Kurnool. Bifacial tools [4.2] were collected.

IAR 1959-60.

Santal-danga. See BARABELUN.

Santalpur, Dt Banas-Kantha. Painted red ware.

IAR 1964-5.

Santhali, Dt Rajkot. Harappa [11.13] Ware.

IAR 1957-8.

Santhal-Sari-ki-Rod, Dt Kutch. Historical site. See Ajmel.

IAR 1965-6.

Santiniketan, Dt Birbhum. Microliths (of unspecified nature).

IAR 1963-4.

Santrapur, Dt Panch-Mahals. Mesolithic [4.5] site.

IAR 1972-3.

Santumba, Dt Ganjam. Microliths (of unspecified nature).

IAR 1963-4.

Sanur (12°33'; 79°55'), Dt Chingleput, with an extensive high ground about 18 hectares in area in Madurantakam Taluka, lying to the w. of Madras Trunk Road flanked by hills on the w., where in the course of explorations of

megalithic sites in the region during 1944-8 a vast Megalithic field [4.17.9] was discovered. Five megaliths were excavated here—two of them (Megaliths 1 and 2) in 1950 and the rest (Megaliths 3, 4 and 15) in 1952—by N.R. Banerjee and his associates of the ASI. Superficially these may be classified into three broad types [4.17], viz. cairn circle—type C (Megaliths 4 and 5), dolmenoid cist—type D 2 (Megalith 3); and dolmenoid cist with flush capstone—type D 3 (Megaliths 1 and 2). Excavations revealed that Megaliths 1, 2 and 3 belonged to more or less the same type, while Megalith 4 was a variant. All of them yielded sarcophagi [12.9] ranging from one (Megaliths 3 and 4) to five (Megalith 1) and Black-and-red Ware pots [11.15.3] varying from 25 (Megalith 4) to more than 70 (Megalith 5). The dolmenoid cists in Megaliths 1, 2 and 3 showed an opening on the e. side of the cist chamber subsequently blocked by irregular stone bits. Megalith 5, seemingly a cairn circle, turned out on excavation to be a pit circle with a large store of pottery, iron and shell objects and skeletal material including skulls. Megalith 4 had an incipient cist chamber with no opening. All the monuments were surrounded by stone circles, their overall diameters ranging from 5-50 to 15-25 m. The pits were generally oblong, oriented e.-w., without the usual lime packing, shallow ramp or slab on the e. side, but the top edge was rivetted e.-w. by boulders embedded in the ancient humus. Structurally Megalith 2 was slightly later than Megalith 1. The process of interment was simple and the sequence was identical with that in other dolmenoid cists. Megalith 1, except for a few fragmentary bones, did not contain any skeletal remains while Megaliths 2 and 5 did. But for the absence of pottery in the sarcophagi in Megalith 2, both were similar to each other in other respects. Megaliths 3 and 4 had no skeletal relics at all though the grave goods comprised some 50 pots and three iron objects. In Megalith 4 bones, pottery and other objects were found crushed and damaged beyond identification. Apart from the sarcophagi which must have been positioned from the top, all other grave goods were inserted through the gap in the e. wall before it was securely blocked.

Analysing the sequence of construction of these megaliths it would appear that the cist chamber was the first to come up with a ring of stones put around; then followed the furnishing, filling with clay, covering of the orthostats, the inner circle with rubble and clay packing to form a hemispherical cairns; and finally the capstone was hoisted on the orthostats. The enormity of the entire endeavour indicates a concerted effort of a group of people signifying a community spirit.

Besides the usual Black-and-red Ware, the other finds include burnished black ware, a dull-red ware with drab wash and slip and a ware with bright-red slip. The pot-

tery is invariably wheel-turned, well-baked and polished, with a sparing use of sand. It bears no decoration or painting. The shapes are the bowl, conical vessel, dish, tulip-shaped vase, three-legged pot, round-bottomed pot, pyriform jar and pot, ring-stand of ordinary and hour-glass shapes and conical and knobbed lid. There are some sherds with post-firing graffiti [20.1], classifiable into a number of types.

The iron objects comprise spears, tanged daggers and knives, hooks, bars, wedges, tanged arrowheads, sickles and horse-bits.

The shell objects from Megalith 5 consist of three large to small conch-shells, five circular convex discs, each with a hole in the centre, six long-barrel-shaped beads, gadrooned beads, two long objects with closed and pointed ends each with an encased iron rod. Incised decorations occur on the exterior of the conch-shells and discs.

Stone objects from Megaliths 2 and 5 include a spherical ball and two pestles of quern [6.19] and whetstone [16.18], barrel-shaped beads of carnelian, both etched and plain, and terracotta whorls. There was also a single ill-fired fragmentary terracotta animal figurine from the cairn filling of Megalith 2. Animal bones represent the wolf or hyena, domestic humped cattle, horse, sheep, goat, etc.

Though no habitation of the Megalithic folk has come to light, it can be assumed that they were an agricultural people and bounded rain-water for irrigation.

Banerjee, N.R., & Soundara Rajan, K.V., 1959, in *AI*, 15, pp. 4-22.—A. BANERJI

Sanur-Ariyapakkan (12°34'; 79°55'), Dt Chingleput. Megalithic [14.17.9] site.

AI, 22, 1966, p. 31.

Sanyasula-gavi, Dt Kurnool. Prehistoric caves. See BILLA SURGAM.

Sapali Kheri, Dt Kurukshetra. See KURUKSHETRA.

Sapkotha hill, Dt Midnapur. Chopper-chopping industry with affinity with Sohan forms [4.2].

IAR 1966-7.

Saprota, Dt Jullundur. PGW [11.14], Black-slipped Ware [11.13] and black-and-red ware.

IAR 1963-4, p. 28. Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 122.

Saptagram, Dt Hooghly. Rouletted Ware [11.21], black ware and medieval ware.

IAR 1961-2.

Saptasagara, Dt Belgaum. Neolithic [4.6.9]-Chalcolithic [4.14.8] site with ash-mound [14.3].

IAR 1965-6. Sundara, A., 1971, in *Prof. Nilakanta Sastri Felicitation Vol.*, Madras.

Saradkel (23°5'; 85°21'), Dt Ranchi, on the e. bank of the Tajna, at a distance of about 9 km to the e. of the Subdivisional town of Khunti, first noticed by Roy, 1915, who quotes a local tradition connecting it with one

Dit Rājā, associated by him with the traditional Asuras or Vikramāditya, and elaborates a theory that the Asuras were the predecessors of the Mundas forming the local population and the authors of the so-called Asura sites [14.4]. The site, which is the most extensive of the Asura sites, was excavated by the writer in 1964-5 (*IAR* 1964-5, p. 6) and was found to be a mono-cultural site with two clearly defined occupational Pds. No structure has been encountered in Pd I but it has yielded burnt brick. A number of pits with charred iron slag and sand make it reasonable to infer that they were smelting furnaces. The structural remains of Pd II consist of a massive defensive wall of baked brick which runs along the periphery of the mound and houses built of burnt as well as mud brick. The floorings of some houses are made of brickbats, occasionally solidly rammed. The pottery is mostly wheel-made, usually terracotta-red and normally of a coarse fabric. The presence of the flanged lid, flat-based bowl and sprinkler, combined with incised decorated designs, suggests a Kushan complex. A large number of iron objects such as arrowheads, axes with single or double cutting edges, chisels, nails, caltrops [19.3.5], knives and longitudinal ploughshares bespeak the prevalence of a full-fledged iron industry. Beads of chalcedony, agate and carnelian, terracotta figurines, clay sealings, round copper coins, too debased to be identified, copper hooks and copper rods have also been found.

The date of the remains on ceramic and other considerations can be placed to the early centuries of the Christian era. A ¹⁴C date also points to the same chronological horizon.

The cultural assemblage of Saradkel tallies closely with those of KUNJLA, BELWADAG and other so-called Asura sites which are spread over the Dt of Ranchi, particularly Khunti Subdivision.

Roy, S.C., 1915, in *Jour. Bihar & Orissa Res. Soc.*, 1, pp. 229-53; 1920, *ibid.*, 6, pp. 393-423.—S.C. RAY

Saradpar, Dt Chanda. Lower Palaeolithic [4.2] site.

IAR 1959-60.

Saragthal, Dt Saharanpur. Grey ware site of the early historical period [4.18.1].

IAR 1965-6.

Sarahiyadih, Dt Monghyr. Sherds of the NBPW [11.16] and sculptures of the Pāla period.

IAR 1961-2.

Sarai-Mohana, Dt Varanasi. Located on the left bank of the river Varuna, about 300 m from Rajghat, excavation here revealed two Pds with a break in between Pd I, with three Sub-pds, had a cultural equipment similar to that from PRAHLADPUR and RAJGHAT. Sub-pd IA yielded Black-slipped Ware [11.13], black-and-red ware and coarse and slipped red ware, besides a few pieces of grey ware. Other finds included decorated terracotta discs, bone points, beads, pottery discs, a terracotta spindle

whorl [6.25] and a terracotta cone. Sub-pd I B witnessed an overall improvement in the cultural assemblage. The NBPW [11.16] including its painted variety came into use. Certain new types in red ware were noticed. Other cultural equipments of the previous Sub-pd continued with many new additions. The distinctive feature of Sub-pd I C was the emergence of a coarse grey ware. The red ware industry too revealed some new types. Black-and-red ware was absent. The structural activity was represented by a terracotta ring-well [14.15]. The occupation in Pd II, assignable to the late medieval times, was of a flimsy nature, disturbed by pits.

IA 1967-8.

Sarai Nahar Rai, Dt Pratapgarh, situated at a distance of 15 km s.-w. of the Dt headquarters, where remains of seasonal camping of the Mesolithic [4.5] people of the Vindhyas have been unearthed by a joint team of the Univ. of Allahabad and the Uttar Pradesh Dept for Scientific Research and Cultural Affairs, under the general supervision of G.R. Sharma. The most conspicuous morphological feature of the area is the living and partially living horseshoe or ox-bow lakes. A few of them contain Mesolithic occupational floors on their banks. The implementiferous locality of Sarai Nahar Rai has an area of 1800 sq m which was excavated during 1971-73 (IA 1971-2, p. 48; 1972-3, p. 35).

The excavators have clues to postulate that the lake near Sarai Nahar Rai was much larger in extant about 8000 years ago (^{14}C date 8395 ± 110 B.C.). It provided hospitable conditions to large animals such as the bison, rhinoceros, stag, etc., bones of which have been discovered at the site, and also smaller games like the fish, tortoise and shells. Thus the favourable ecological conditions around the lakes attracted the Mesolithic population of the Vindhyas (cf. BELAN VALLEY) during summers when the conditions were harder there. The habitation remains at the site are in the form of burials, hearths and a limited number of post-holes and paved flooring.

Out of the total number of 15 burials II were exposed. They are in the form of oblong pits with soil cushions. Laid in the w.-e. orientation, the skeletons are in an extended position. The 'right hand in the case of male and left in the case of female is placed across the abdomen'. The grave goods comprise microliths [4.5] and a particular type of shells. The skeletal remains belong to 16 to 30 year old males and females with well-built structures, the average height being 1.80 m. The racial character of the population is different from that of BAGHAIKHOR and LEKHAHIA rock-shelters of the Vindhyan range.

Eleven large and a few small hearths of varying dimensions have been met with, the size-range being 1.02 to 0.45 m on plan at the bottom and 1.49 to 0.70 m at the

top. Dug out with sharp tools made of horn or hardened wood, they are of a circular, oblong and irregular hexagonal shapes. The one having a paved floor and post-holed enclosure has been identified by the excavators as a community hearth. Animal bones in a semicharred condition have been obtained. In two cases the hearths were scooped twice.

A considerable number of microliths of geometric tradition have been recovered both from the burials and also from the habitation floor. The source of raw material for the lithic tool-kit is the hilly region of the Vindhyan range, as the plains are completely devoid of stones. The absence of pottery suggests that the remains belong to the makers of an aceramic microlithic culture. (See GANGA VALLEY.)

Sharma, G.R., 1973, in *Proc. Prehistoric Soc.*, 39, pp. 129-44; 1975, Presidential Address to the Indian Prehistoric Soc., Delhi, republished in 1975, K.C. Chattopadhyaya Memorial Vol., Allahabad, pp. 1-20.—V. JAYASWAL.

Sarainkala, Dt Allahabad. Some pottery types were identical with those associated with the early levels of the defences of KAUSAMBI. See ONAUR.

IA 1959-60.

Sarai Sheikh, Dt Lucknow. Early historical site yielding NBPW [11.16] and later ware.

IA 1969-70.

Saran, Dt Kutch. Rang Mahal [11.24] site.

AI, 18 & 19, 1962 & 1963, p. 187.

Sarangpur¹, Dt Jabalpur. Series II (Middle Palaeolithic [4.3]) tools.

IA 1958-9.

Sarangpur², Dt Rupnagar. SISWAL B culture site. OCW [11.5] is also reported.

IA 1964-5. Suraj Bhan, in *Res. Bull. (Arts) Panjab Univ.*, 57, 3, 1967, pp. 1-9, 1975, *Excavation at Mitathal & Other Explorations in the Sulej-Yamuna Divide*, Kurukshetra, 123.

Sarangpur³, Dt Shajapur. Malwa Ware [11.10] and white-painted black-and-red ware.

IA 1960-1.

Saranyya, Dt Mirzapur. Black-and-red ware [11.6.3] and NBPW [11.16].

IA 1962-3.

Sarasvati valley, the river anciently held holy, taking its rise in the outer Himalayas as an insignificant nullah and joining the Somb-nadi near Ad Badri where it debouches from the hills in Jagadhri Tahsil of Dt Ambala, the joint course turning e. wards to join the Yamuna near Dadupur. But the old course of the river is today represented by a drain called the Sarsuti (Sarasvati). This traditional bed is irregularly preserved in Jagadhri Tahsil till it reaches Mustafabad, whence it takes a s.-w. course, its flood-plain fairly traceable along BHAGWANPURA², Khairi, Pipli and KURUKSHETRA, all in Dt Kurukshetra. Passing by PEHOVA and THEH POLAR it enters Panjab State at Bahr Pissaur and joins the GHAGGAR at Satrana in Dt Patiala. But anciently

the stream seems to have flowed independently through the Rangoi bed along Jakhal in Dt Sangrur and Chimun, Hijrawan, BANAWALI and SIRSA in Dt Hissar and then joined the Ghaggar, locally called *nālī*, about 11 km w. of Sirsa. Its downward course is the same as that of the GHAGGAR or *nālī* in Dt Ganganagar of Rajasthan and Hakra in Dt Bahawalpur of Pakistan. In Pakistan the Hakra bed has been traced to some 240 km along Fort Abbas, Marot Fort, Lurewala, etc., and its continuation is marked by the Nara bed in Sind through which it flowed into the Rann of Kutch.

The prehistoric remains in the Sarasvati basin were for the first time brought to light in the early 40s' by the investigations of the Hakra valley by Stein though he covered the Rajasthan part of the stream as well without noticing any such remains (Stein, 1942). Stein's work was further extended by Ghosh (see below) when he undertook a survey of the dried-up courses of the Sarasvati and its tributary the DRṢADVATĪ in Dt Ganganagar between 1950 and 1953. Within Haryana the PGW [11.14] was picked up from the valley at PEHOVA and KURUKSHETRA (RAJA-KARNA-KA-QILA) by Lal at about the same time (Lal, 1954 and 1955).

An intensive survey of the Sarasvati basin within Haryana has been carried out by the writer since 1960. Among the important sites explored may be mentioned BANAWALI in Dt Hissar. Excavation was conducted at KURUKSHETRA (RAJA-KARNA-KA-QILA and MIRZAPUR) between 1970-1 and 1975-6 by the writer and U. V. Singh. While the PGW was recovered from the lowest levels of RAJA KARNA-KA-QILA the MIRZAPUR mound yielded late Harappa material [4.10] in Pd I. Excavation at BANAWALI by Bist on behalf of the Arch. Dept of Haryana State between 1971 and 1974 has yielded a sequence of the early SISWAL, Harappa [4.9] and late Harappa cultures, corroborating the evidence from SISWAL and MITATHAL (Bist, 1976). More recently excavation at BHAGWANPURA² and Kasithal in Dt Kurukshetra has thrown important light on the stratigraphic relationship between the late Harappa and PGW cultures by yielding evidence of a partial overlap between the two.

The above investigations within the Harappa part of the valley have established the following sequence of cultures (for the Rajasthan part see below): Pd I (pre-Harappa): BANAWALI; Pd II (Harappa): BANAWALI II; Pd III (late Harappa): BANAWALI III, MIRZAPUR I, BHAGWANPURA² A; Pd IV (PGW): BHAGWANPURA² B and C, RAJA-KARNA-KA-QILA I, Kasithal I; Pd V (NBPW): Kasithal II, RAJA-KARNA-KA-QILA II; and Pd VI (early historical): RAJA-KARNA-KA-QILA III, Kasithal III.

Bist, R.S., 1976, in *Arch. Congress & Seminar 1972*, Kurukshetra; 1976, Banawali, Chandigarh. Ghosh, A., 1952, in *Bull. National Inst. of Sciences of India*, New Delhi. Stein, A., 1942, in *Geographical*

Jour., 5, p. 99. Suraj Bhan, 1973, in Agrawal, D.P., & Ghosh, A., ed., *Radiocarbon & Indian Arch.*, Bombay; *Prehistoric Arch. of the Sarasvati and Drisadvati Valleys* (Haryana), Ph.D. thesis, Baroda (unpublished); 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra. Suraj Bhan & Shaffer, J.G., 1979, in *Man & Environment*, 2.—SURAJ BHAN

It has been stated above that Stein, 1942, explored the dried-up Sarasvati valley in n. Rajasthan without identifying any prehistoric site and continued his work further down the river-bed in the Bahawalpur region where he found Harappa and other sites. (Valuable work has now been done in the Bahawalpur region by M.R. Mughal, quoted in Dikshit, 1979). The writer conducted an intensive exploration in the valley falling within Dt Ganganagar, n. Rajasthan, in 1950-53 (Ghosh, 1952, 1953) on behalf of the ASI, covering in the same Dt also the course of DRṢADVATĪ which met the Sarasvati a few km n of Suratgarh (29°19'; 75°57'). The courses of both the streams are marked by sand dunes of varying heights flanking flat dry stretches of alluvial land marking the respective ancient river-beds. (The landscape has of late largely changed by irrigation made possible by recently excavated canals.) The sand dunes have been seen to contain fresh-water shells, which must have got deposited on the banks of the river when they were still alive, thus disproving Stein's theory that they were formed of drifted sand.

The explored area has been seen to be rich in archaeological sites which may be classified as Harappa [4.9], PGW [4.15] and early historical [4.18.2], with the addition of the now well-known pre-Harappa [4.8]. At the time of the discovery of the last-named culture at SOTHI and NOHAR in the DRṢADVATĪ valley, both single-culture sites and hence without any cultural sequence, it was thought to be post-Harappa, but excavation at KALIBANGAN has shown it to be pre-Harappa and largely co-existing with the Harappa. Its widespread farther e. has now been established.

In Dt Ganganagar the river followed a s.-w. course past the town of HANUMANGARH (29°35'; 74°21'), previously known as Bhatnair or Sadulgarh, till it reached Suratgarh, where it took a more or less w. course reaching the town of Anupgarh (29°7'; 73°6'), about 10 km beyond which it crossed what is now the Indo-Pakistan border. Sites of the cultures mentioned above are profusely met with throughout in the valley. The main Harappa sites, beginning from the border and proceeding e. wards to Suratgarh and then n.-e. wards towards Hanumangarh are: BINJOR-1, BINJOR-3, seemingly with a cemetery to its w. indicated by complete Harappa pots found near the surface, TARKHANEWALA-DERA, CHAK 75, CHAK 71, BAROR, BUGIA, MOTASAR-1, MOTASAR-2, CHAK 50, MATHULA, CHAK 21, CHAK 15, CHAK 11, BHAGWANSAR-4 and-5 and KALIBANGAN, the largest

and most important of them, now fully excavated. Apart from typical Harappa pottery [11.3], though the pointed-bottom Indus goblet is virtually unknown, there are parallel-sided chert blades, the longest collected earlier, now in the Bikaner Museum, being over 15 cm in length, short blades of quartz and a profusion of terracotta cakes [6.27], both oblong and triangular. Some even show the typically Harappa dichotomous pattern of settlement.

Most of the Harappa sites have on the surface sherds of the SOTHI/KALIBANGAN I Ware [11.2] though according to the recent observation of Dikshit, 1979, they are only limited in quantity down KALIBANGAN. Another feature is that the PGW settlements never overlie the Harappa ones, even though they may exist in very close proximity to each other. (For example TARKHANEWALA-DERA is within stone's throw from CHAK 86, a PGW site). This feature is noticed elsewhere also, for example at Hulas, Dt Saharanpur, now (1979) under excavation (information from K.N. Dikshit). In fact except at ROPAR and ALAMGIRPUR nowhere are the PGW people known to have utilized the pre-existing Harappa mounds to settle upon. (The overlap between the late Harappa and PGW at such sites as BHAGWANPURA has to be seen in a different light.) This seems to confirm the hypothesis of Burrow, 1963, that the Vedic Aryans (assuming the identity of the PGW people with the Aryans, whether the early or later ones is irrelevant here) avoided the deserted older settlements which are called *arna* in early and late Vedic literature.

The prominent PGW settlements BINJOR-2, CAHK 86, RER, SARDARGARH-2 excavated by B.B. Lal in 1961 with unpublished results (of AI, 20 and 21, 1964 and 1965, p. 206) and BAREKE. The remains of this period are often overlain by those of the succeeding early historical (RANG MAHAL) culture. At the excavated site of RER the later settlement overlies a thick burnt deposit of the PGW settlement. Along with the typical PGW of Haryana and w. Uttar Pradesh there is a profusion of red ware, the commonest and most distinctive of which is the vase with impressed designs on the handmade body and plain wheel-made upper part. The continuous impressed designs, probably produced by the beating of the leather-hard surface of the pot with a wooden beater with the designs carved on it in the negative, consist of overlapping of concentric circles, leaf designs, series of vertical and horizontal lines intersected by vertical ones, etc. Except for the PGW itself this class of pottery is the diagnostic characteristic of the culture in the region but is scantily reported from the PGW sites farther e. (Tripathi, 1976, pp. 76-7). A few such sherds however have been found in the current excavation at Hulas referred to above (information from K.M. Dikshit).

A remarkable negative feature of the Sarasvati valley in this region is the total absence of the NBPW [11.16] either in association with the PGW or independently. This may have some bearing on the riverine fluctuations in this region noted below.

Then followed a very rich early historical culture, labelled Rang Mahal culture, after the site of Rang Mahal¹ about 3 km up Suratgarh. The sites further up are numerous and some are of huge dimensions, those down Suratgarh being smaller. The late medieval fort of HANUMANGARH itself stands on a PGW-Rang Mahal mound. BHANWAR-THERI, MANAKSAR, PILIBANGAN not far from KALIBANGAN, RANG MAHAL, itself, BADOPAL and AMARPURA on the confluence of the Sarasvati and DRSHADVATI, now reportedly damaged by a canal, are some of the leading sites of the culture. Considerable quantities of brickbats indicate the existence of baked-brick houses. Large terracotta plaques of both religious and secular subjects from RANG MAHAL¹ (*Progress Rep.*, ASI, W. Circle, 1920-1, pp. 112-15) formed the decoration of the facades of the places of worship, here as at Badopal; they betray late Gandhāra and early Gupta influences. In addition terracotta figurines and Kushan, late Kushan and Yaudheya coins are plentiful and are indicative of the date of the culture. Of these sites RANG MAHAL¹ has been excavated (Rydh, 1959). The pottery of the culture [11.24] is distinctive both in shapes and paintings, and some shapes, e.g., the internally knobbed lid, are reminiscent of the Harappa shapes, if in a modified form, as though an atavistic process was at work. The same remark applies to the liberal use of faience [16.6], particularly in bangles, in the culture.

A general desertion followed the decay of the Rang Mahal culture and the only later relics are camp sites of nomadic people indicated by a scatter of pottery here and there in the dry river-bed and also on the sand-dunes. Narrow wells dug deep into the soil to reach the low water level sustained the few and far between villages till a few minor distributaries from the Ganga canal dug in the 20s somewhat retrieved the situation, which, as stated above, has now changed for the better with more canals.

The rise and fall of the cultures in the valley can be closely related to the vicissitudes of the flow of water in the river. Thus the PGW sites are generally small and are sometimes situated in the river bed itself, indicating a scanty flow of the river water. A large Harappa site like KALIBANGAN regarded as one of the metropolises of the Harappa culture could not have flourished without a steady and assured supply of river water. At the end of the scale come the large and prosperous RANG MAHAL sites which could only thrive with sufficient water. And thereafter came a prolonged dryness relieved only in

very recent days by canals. A steady flow, then a desiccation, later on a resuscitation and then utter dryness of the river are clearly indicated by archaeological evidence.

This alternate plentiful supply and scarcity of water in the river is confirmed by the boring in the river-bed by Raikes, 1968, who explains the phenomenon by the volume of water of the Sarasvati flowing alternately as the Yamuna and Sarasvati. For this cycle he lays down a time-table, whereby an e. ward diversion of the water to the Ganga system is indicated in c. 1750 B.C. (end of the Harappa culture), resulting in a dry phase (partly coinciding with the PGW period), a recurrence of the wet phase in the early centuries A.D. (RANG MAHAL period) and then by another desiccation. Such a regular cycle may look like a deliberate attempt to equating the hydrological datum (in this case the occurrence of the so-called Yamuna sand in the dry bed of the Sarasvati) with the archaeological settlement pattern and is contradicted by literature wherein both the Yamuna and Sarasvati are mentioned as flowing simultaneously (cf. *Rgveda-samhitā*, 10.76.7). Nevertheless the coincidence of the two sets of evidence is noteworthy.

The palynological [7.4] evidence, extrapolating that derived by Singh from his pollen-analytical studies of salt-lake deposits in Rajasthan, indicates that at the beginning of his Phase IV, c. 3000-1000 B.C., the climate seems to have taken a sudden change to wetter condition, 'the period of maximum wetness appearing to last only up to 1800 B.C. Thereafter, the climate shows a small-scale oscillation to drier condition between c. 1800 and c. 1500 B.C., followed by a slight reversal to a relatively weak wetter condition, lasting to about 1000 B.C.' (Singh, 1977).

Burrow, T., 1963, in *Jour. Ind. Hist.*, 41. Dikshit, K.N., 1979, in *Man & Environment*, 3, pp. 105-8. Ghosh, A., 1952, in *Bull. Inst. Sciences in India*, 1; 1953, in *East & West*, year 4, pp. 31-4. Raikes, R.L., 1968, in *Antiquity*, 42, pp. 286-9. Stein, A., 1942, in *Geographical Jour.*, 99, pp. 173-82. Rydh, H., 1959, *Rang Mahal*, Lund. Singh, G., 1971, in *Arch. & Physical Anthropology in Oceania*, 6, 177-89. Tripathi, V., 1976, *Painted Grey Ware—an Iron Age Culture of n. India*, Delhi.—A.GHOSH

Saraswati, Dt Mahesana. Survey of the Saraswati resulted in the discovery of a large number of microlithic (of unspecified nature) sites.

IAR 1956-7.

Saraswatipalli, Dt Cuddapah. Palaeolithic scraper flakes.

Foot, R.B., 1916, *Prehistoric & Protohistoric Antiquities*, Madras.

Sarawa, Dt Meerut. PGW [11.16], Black-slipped Ware [11.13], red ware of the Śunga-Kushan period and medieval ware.

IAR 1966-7.

Sardapur, Dt Dhenkanal. Four Neolithic [4.6.7] chisels were picked up.

IAR 1958-9.

Sardargarh (29°18'; 73°54'), Dt Ganganagar near Suratgarh in the SARASVATĪ VALLEY. Sardargarh-1 produced Rang Mahal Ware [11.24], shell bangles and a carnelian head. Sardargarh-2 had a few Harappa [11.3] sherds, pots with rusticated bottom (of SOTHĪ/KALIBANGAN [11.2] affinity), Rang Mahal Ware and faience bangles. Sardargarh-3 yielded grey ware and impressed pottery associated with PGW [11.14], Rang Mahal Ware, shell bangles and beads, a mould and a tile.

Lal, B.B., in *AI*, 20 & 21, 1964 & 1965, p. 206-9 (for Sardargarh-3).

Sardewadi, Dt Pune. Site of c. and upper Deccan Chalcolithic complex [4.14.5, 6].

IAR 1962-3.

Sarekha, Dt Seoni. Megalithic [4.17.6] site on the confluence of the Wainganga and Hirin rivers.

Madhya Pradesh ki Ruparekha, p. 42.

Sarengarh, Dt Bankura. Tools of Series II (Middle Palaeolithic [4.3]) and microliths (of unspecified nature).

IAR 1959-60.

Saresia, Dt Ganganagar. Late Rang Mahal [11.24] site in the SARASVATĪ VALLEY.

Unpublished.

Sargo, Dt Purulia. Microliths (of unspecified nature).

IAR 1963-4.

Sarhat, Dt Banda. Painted rock-shelter [13].

Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad, p. 54.

Sarikondapalem, Dt Krishna. Sites with dolmens [4.17.7].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Sarjana, Dt Udaipur. Early Stone Age (Lower Palaeolithic [4.2]) tools and microliths (of unspecified nature) in the Berach valley.

IAR 1962-3.

Sarkari Kumar, Dt Saharanpur. Harappa Ware [11.3] and OCW [11.5].

IAR 1966-7.

Sarkari Shekh, Dt Saharanpur. Harappa Ware [11.3] and OCW [11.5].

IAR 1966-7.

Sarkharia, Dt Junagarh. Red Polished Ware [11.23].

IAR 1957-8.

Sarnath, Dt Varanasi, 5 km to the n. of Varanasi city, where Buddha preached his First Sermon (in Buddhist terminology turned the Wheel of the Law) after his enlightenment at BODH-GAYA and which thus became one of the four holiest places to the Buddhist world. The centre, known in late historical times as Sad-dharma-cakra-mahā-vihāra, is one of the richest in Buddhist antiquities ranging in date from the times to Aśoka down to the 12th century. Aśoka built here one of his Dharmarājikā Stūpas and near it erected a pillar surmounted by a magnificent capital of four adorsed lions and inscribed on it an edict threatening dissenting monks and nuns with excommunication. For centuries

thereafter the place continued to be a focus of structural and sculptural activity.

Aśoka's Dharmarājikā, with its subsequent accretions, was ruthlessly despoiled in 1794 by a local person for its bricks. In the course of the operation was found a green marble relic casket [12.8] within a sandstone box. Later on many a person, lured by rich finds of sculptures, tried their spade amongst the ruins and collected an immense number of images. In 1835-6 A. Cunningham excavated at the Chaukhandi and Dhamekh Stūpas (below) and a temple and monastery and recovered the stone box but not the relic casket found in 1794. His left-over proceeds, 50 or 60 cartloads of them, were thrown into the river Varuna to serve as a break-water to the piers of a bridge to be constructed across the river. Cunningham revisited Sarnath many times thereafter (ASI—AR, 1, p. 103, p. 121; 8, p. 16; 11, p. 181). In 1851-2 M. Kittoe exposed numerous stūpas and a monastery. Somewhat more systematic work was done in 1904-5 by F.C. Oertel who exposed the main shrine and the pillar of Aśoka with its capital and collected sculptures and inscriptions (ASI—AR 1904-5, p. 59).

From 1907 and sporadically thereafter J. Marshall and other officers of the ASI continued excavations at Sarnath (ASI—AR 1906-7, p. 68; 1907-8, p. 43; 1914-5, p. 97; 1919-20, p. 26; 1921-22, p. 42). The Dharmarājikā Stūpa was found to have a circular base made of wedge-shaped bricks and to have undergone enlargements several times afterwards, the last integument being of the 12th century. Among other structures was a brick temple, the Main Shrine, probably representing the ruins of the 60 m high Mūla-gandha-kūṭi, raised on the spot where Buddha had resided and which had been seen by Hiuen Tsang. It dated from Gupta times and had rectangular chapels on three sides of the square base, the fourth having steps leading to the shrine. The long passage leading to the shrine from the gate has rows of votive stūpas. The monasteries, ranging in date from the 4th-5th to the 12th centuries, conform to the general plan of this class of buildings [14.12], but unlike NALANDĀ they are not arranged in a row.

A remarkable structure of Sarnath is the Dhamekh Stūpa, a solid cylindrical structure 28 m in diameter at the base and 43.6 m in height, built partly of stone and partly of brick. The stone facing the lower part is adorned with delicate floral carvings. It is probably of Gupta origin. About 800 m to the s. of the main group of ruins and quite detached from it stands the Chaukhandi Stūpa, a brick structure with an extant height of about 25 m. There is no evidence for dating the structure but it is evident that it was a terraced monument, the terraces built over foundation cells.

Sarnath has yielded an extremely rich crop of sculptures. Apart from the capital of Aśoka, which is now the

State Emblem of India, and a colossal Bodhisattva image of the reign of Kaniska from Mathura, an immense number of sculptures of Buddha and Buddhist deities, many of them of Gupta date, form a notable series. In fact the Gupta sculptures from Sarnath have been primarily responsible for raising Gupta art to the place of honour that it now occupies in the art history of India.

In addition to stone sculptures the excavations brought to light sealings with the legend *śrī-Dharmacakra-bhikṣu-saṅghasya*, tablets with the Buddhist creed *ye dharmā* etc., personal seals and miniature clay stūpas with the above tablets inside. Buddhist plaques of the usual type and miniature *lingas*. Among architectural fragments are carved bricks, no doubt pertaining to temples, and tiles.

Perhaps not much attention was paid in the excavations to domestic objects. However large pottery jars, evidently for storing grains, *loṭās*, sometimes spouted, cooking pots, bowls, crucibles [15.4], censers [12.2], lamps [6.11] and dabbers [16.11] are on record; so are stone dough-plates, saddle querns with pestles and both upper and lower parts of rotary querns [6.19].

Majumdar, B., 1937, *Guide to Sarnath*, Calcutta. Mitra, D., 1971, *Buddhist Monuments*, pp. 66-9. Sahni, D.R., 1914, *Catalogue of the Museum of Arch. at Sarnath*, Calcutta; 1933, *Guide to the Buddhist Ruins at Sarnath*, Calcutta.—A. GHOSH

Saroli, Dt Jabalpur. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1958-9.

Sarsa Bhor, Dt Kurukshetra. PGW [11.14] site.

IAR 1960-1. Suraj Bhan, 1976, *Excavation at Mitthul & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 124.

Sarsana, Dt Ujjain. Historical (of unspecified nature) site.

IAI 1971-2.

Sarsawa, Dt Saharanpur. PGW [11.14] site.

IAI 1963-4.

Sarthalkhera, Dt Moradabad. Grey ware, red ware of the Śunga-Kushan period and medieval ware.

IAI 1970-1.

Sarthauli, Dt Shahjahanpur. A Copper Hoard [4.11] site yielding a shouldered celt, a harpoon and five spearheads.

AI, 7, 1951, p. 20. IAR 1965-6.

Sarupganj, Dt Bhilwara. Series III (Mesolithic [4.5]) tools.

IAI 1959-60.

Sarurpur Taga, Dt Saharanpur. OCW [11.5] site.

IAI 1965-6.

Sarutaru (26°; 91°8'), Dt Kamrup, bordering that Dt and Khasi Hills, 25 km s.-e. of Gauhati, a Neolithic [4.6.6] site on a hill-top discovered by the writer in 1967 and excavated by him for three seasons. Excavation in three trenches measuring 3 km square each revealed a single cultural horizon of 36 cm thickness. The cultural contents [4.6.6] recovered from the deposit include ground

stone celts and potsherds. The nine stone celts stained with brownish tinge are made on grey to black slate and cream to buff sandstone. They are manufactured in two stages—chipping and grinding—and belong to two types: (1) shouldered celts, seven and (2) round-butted axes, two. The former are made on flat and thin nodules of slate; the faces are therefore smooth and the sections thin. The straight and broad cutting edge is sharp due to bifacial grinding about 1 cm from the edge. The tenon at the butt-end is formed by curved shoulders by making grooves on either side with harder rounded pebbles. The round-butted axes with broad cutting edge and tapering sides are found all over.

Of the numerous potsherds recovered along with stone celts no complete shape is available. The pottery is handmade and not well-baked. It shades off into brown, buff and grey, depending upon the nature of clay and the degree of firing. On the exterior the ware is decorated with cord or basket impressions in the form of either parallel or criss-cross lines impressed on the pot with paddle which was wrapped in cord or matting.

Similar Neolithic finds were recovered from excavation conducted earlier by T.C. Sharma at DAOJALI HADING pointing to the wide distribution of the Neolithic culture in Assam.

A comparative study of the Neolithic culture of Sarutaru with the 'ethnographic present' of the existing societies in the hills in the same geographical area reveals a cultural continuum from the Neolithic period down to the present. The present tribal societies practise a method of shifting cultivation called *jhum*. The agricultural implements they use at present are similar in type and form to the neolithic hoes, except that stone is replaced by metal. The continuity owes to a large extent to the unproductive terrain which they have inherited from their Neolithic predecessors.

The shouldered hoe and round-butted axe types along with others have a wide distribution in the rest of e. India, in fact in e. Asia. The ceramic tradition of Sarutaru has no parallel in the Neolithic cultures of other parts of India.

Rao, S.N., 1973, in *Bull. Dept. of Anthropology, Dibrugarh Univ.*, 1973.—S.N. RAO

Saruwali-Bandi, Dt Kutch. Painted Ksatrapa pottery (Rang Mahal Ware? [11.24]).

IAR 1967-8.

Sarvathi hill, Dt Trivandrum. Megalithic [4.17.10] pyriform urns.

IAR 1967-8.

Sarvala, Dt Dhule. Microliths associated with ochre-coloured pottery. See DHAMDAL.

IAR 1957-8.

Sasalhatti¹, Dt Belgaum. Neolithic [4.6.9]-Chalcolithic [4.17.8] site.

IAR 1965-6.

Sasalhatti², Dt Bijapur. Chalcolithic [4.14.8] site.

P.B. Desai Felicitation Vol., Dharwar, 1971, pp. 4-30.

Sasankota, Dt Anantapur. The site yielded the Russet-coated Painted Ware [4.22], Rouletted Ware [11.21], fragments of beaked rims in characteristic fabric and the Megalithic Black-and-red Ware [11.15.3].

IAR 1955-6; 1957-8.

Sasa-Talheddi, Dt Ambala. PGW [11.14] site.

IAR 1964-5. Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 123.

Sasi¹, Dt Kurukshetra. Late Harappa [4.10] site comparable with MITATHAL II B.

Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 122.

Sasi², Dt Patiala. Harappa [4.9] site along the w. bank of the Ghaggar.

IAR 1966-7, p. 30.

Sasivehalla, Dt Dharwar. Lower Palaeolithic [4.2] site.

Joshi, R.V., 1955, *Pleistocene Studies in the Malaprabha Basin*, Poona & Dharwar, p. 34.

Sasni, Dt Aligarh. PGW [11.14] site.

IAR 1957-8.

Sastevadi, Dt Pune, on the bank of the Mula-Mutha opposite THEUR. Excavation by S.R. Rao and his assistants of the ASI (IAR 1971-2, p. 35) revealed two Pds of prehistoric occupation. Pd I had Neolithic [11.1.5] handmade burnished grey ware and painted Malwa Ware [11.10], a polished axe and quern of stone and rows of circular houses of wattle and daub. Pd II was marked by a rammed mud floor and the presence of the Jorwe Ware [11.11], parallel-sided blades of chalcedony and copper fish-hook [6.6]. The last, Pd III, belonged to late medieval times.—A. BANERJI

Satalga (Indi), Dt Bijapur. Sherds of Red Polished Ware [11.28] were collected.

IAR 1957-8.

Satampalli, Dt Kolar. Site with Black-and-red Ware [11.15.3] and red ware.

IAR 1972-3.

Satanikota (15°55'; 78°14'), Dt Kurnool, located on the right bank of the Tungabhadra in Taluka Nandikotkur, excavated in 1978 by the ASI with the writer as the director with a view to finding the cultural sequence before the submergence of the area under the SRISAILAM hydroelectric project. The cultural deposits of the site are divisible into three Pds.

Pd I, Mesolithic [4.5], is characterized by microliths comprising scrapers, blades, backed blades, a burin and a large number of flakes and flake tools. Unassociated with pottery or any other objects they have been recovered from the top of a red patinated gravel bed lying over the decomposed rock which in turn rests up on the basal gneissic complex. The Mesolithic people must have appeared on the scene long after the formation of

the gravel bed.

Pd II, middle of the 1st century B.C. to the middle of 3rd century A.D., represents the main occupational period of the site. At certain places a sterile layer separates Pds I and II. The structural remains of this Pd fall mainly into three phases, 1, 2a and 2b. A rampart together with a moat and the gate are amongst the important constructional activities of Phase I. The builders of the fort appear to have followed the contour of the natural elevated ground resulting in an unconventional plan of the fortification. The existence of the fort wall can be partly established on the w., e. and n. periphery, while on the s. side a considerable stretch of the wall with a gateway has been exposed. The main wall of the rampart is built of Cuddapah slabs of irregular dimensions laid in mud mortar. It measures 3.2 m in width with 10 to 13 extant courses and has a 1.45 m wide facing of burnt brick, $56 \times 28 \times 8$ cm. On the inner side along the main wall a 3 m wide pavement of brickbats has been found. The rampart is enclosed by a moat cut into the natural bed rock as indicated by extensive chisel marks present on the sides. The average depth and width are about 3.20 m and 4.25 m respectively. In order to prevent the spilling away of water from the moat through depressions in the bed rock embankments of boulders and Cuddapah slabs have been raised on the outer edge of the moat wherever necessary. While the sides of the moat are steep the basin is generally flat. Rain water from the higher levels flowed into the moat and was retained.

The elaborate gateway complex facing s. has a flight of five steps of 3 m width and flanked by 45 cm wide n.-s. parapet walls, partly of burnt brick and partly of stone. Each tread measures 1.10 m with risers of 23 cm. While small flat stones of irregular sizes have been used for paving the run of the stairway, the edges of the risers are faced with brick. Three pairs of sockets, each 37 cm in diameter, cut into blocks of stones and distributed evenly on either side of the gate have been found in the following arrangement. The first set, one on each side of the flanking stones inside the gate, was to carry two leaves of the door. Another set of two sockets on either side of the outer edge of the gateway complex almost touches the inner edge of the moat. These were probably meant for heavy posts of a drawbridge, perhaps used as a means for crossing the moat. No evidence of any permanent arrangement connecting the gate and the other side of the moat is available.

The structural activity within the fort commences from nearly 12 m away from the fort-wall. An extensive structural complex covering an area of about 300 sq. m and comprising a couple of rectangular rooms and enclosures measuring on an average 1.95×2.65 m and 3.20×4.45 m respectively is evidenced only from robber's

trenches. The walls of burnt brick, $50 \times 26 \times 8$ cm have been practically obliterated due to systematic brick robbing except at a few spots where truncated walls are available. The width of the walls ranges between 52 to 68 cm. For these walls deep and wide foundation trenches have been dug in the underlying deposit of red painted gravels and then packed with gravels in the matrix of hard clay.

The structural activity of Phase 2a of Pd II is represented mainly by a series of burnt-brick, $50 \times 26 \times 8$ cm, structures, all connected with each other by a deep foundation cut into the hard ground of red patinated gravels. Most of the structures are below the ground level and are internally tapering due to offsets provided for each row of brick in the walls. The bottom is either paved with full brick or is founded on bed rock. The roofs of these structures appear to have been of overlapping tiles fixed by iron nails. The tiles [14.6.5] are mainly of three varieties, viz. flat, with eaves and ridged, besides finials. The flat ones carry a pair of holes in the upper edge to drive nails into wooden rafters, besides bearing traces of whitewash.

Phase 2b has remained of a brick-paved platform, 1.36×1.5 m in a damaged condition with post-holes and a room, 2.52×2.22 m with a partly paved drain. The walls of the latter carry a number of post-holes. A huge stone slab covering the brick floor has been found in the centre of this structure.

The ceramic contents of this Pd are characteristic of the Sātavāhana sites of comparable times. The principal ceramics include the Black-and-red Ware [11.15.3], Rouletted Ware [11.21], Russet-coated Painted Ware [11.22], kaolin, Red Polished Ware [11.23] and chocolate-slipped wares, besides the usual slipped and unslipped red and black wares. There are at least two varieties of the Black-and-red Ware—burnished and unburnished—the former noted for its bright shiny surface. It is represented largely by the dish and bowl and in some instances betray affinities with the Megalithic Black-and-red Ware of the region. Sometimes the pots are externally black and internally red and there are a few specimens where the outer and inner surfaces of the bottom are black while the rim and sides are red. A few sherds of the dish in the Rouletted Ware bear concentric circular painted bands in white pigment instead of roulettes. The Russet-coated Painted Ware is very negligible in the total assemblage, the types represented being the bowl and dish. The pottery is painted with criss-cross, lattice, radiating dots, vertical lines alternating with dots and groups of oblique lines. Kaolin ware is scantily represented, the most noteworthy shape being the sprinkler so common in the Red Polished Ware. The Red Polished Ware is represented by 3.4% of the total collection. The incidence of chocolate-slipped

ware is throughout uniform, with a good number of large-sized basins and troughs. The slipped variety of the red ware is the most prolific and accounts for 30.72% of the total ceramics. Among the types mention may be made of the storage jar bearing designs and decorations in numerous patterns including traditional symbols like the *tri-ratna*, besides the dish, bowl, basin, trough and vase, the decorations being incised stamped or applied. The unslipped and undecorated red ware comprises 22.86% of the collection and has mainly two types—the deep bowl and dish. The black ware of the slipped variety is represented mainly by the bowl and dish, the types however having analogues in the red ware and Black-and-red Ware. The unslipped variety of the black ware presents a large assortment of types, viz. the carinated *hāṇḍī*, lid-cum-bowl, wide mouthed-heavy rimmed jar and *loṭā*.

A lead coin of a hitherto unknown ruler Śrī Sāta Kumāra has been recovered from this Pd. The legend is in early Brāhmī characters of c. 1st century B.C. The obverse, in addition to the legend, bears the *tri-ratna*, *svastika* and *nandipada* whereas the reverse shows a fruit-bearing tree within square railing and wavy line with two pellets in lower curves below the tree. The author of the coin may be identified either with Sāti-Siri of the larger Nanaghat inscription of Śātikumāra of Jaina tradition. He could be a local ruler as well.

Among stone objects mention may be made of legged querns, mullers [6.19], marbles and a few architectural fragments. The metals represented are gold, lead, copper and iron. Gold is evidenced by the discovery of a ring studded with a piece of lapis lazuli. Copper objects are represented by rings and bangles. Iron, however, presents a large assortment of different types of objects, e.g., bangle, ring, nail, spearhead and sickle, besides lumps. Shell and glass account for a number of pieces of bangles and rings. Animal bones and bone points have also been recovered. Neolithic celts have been found in unstratified contexts, besides a few from the surface.

Amongst terracotta objects a solitary example of female head, with its head-dress, typical of the Sāta-vāhana period, knotted in the form of crocodile heads on either side (*cūḍamaṇi-makarika*) over the top is interesting. It is made in the double mould technique.

As many as 200 beads have been found. Of these glass alone accounts for nearly 50%, followed closely by terracotta which constitutes nearly 25%. Shell, carnelian, agate, jasper, bloodstone, chert, opal and bone are the other materials for beads of different shapes. Amongst the semiprecious stones the largest representation is that of jasper, ten, followed respectively by carnelian, eight, and agate, six. Bloodstone is represented by two beads and opal, chert and bone only by a single specimen each. A noteworthy discovery is a turtle-shaped pendant of

shell.

Pd III, medieval, is recognized by pottery, two copper coins and other associated antiquities. However the habitational deposits of this Pd have been subjected to such extensive spoilage that the ceramics and antiquities have got mixed up with those of the preceding Pd, as a result of which a clear picture has not emerged. Fragmentary stone walls and damaged floors are the only structural remains of this Pd. The ceramic industries are represented by plain and unslipped red, grey and deep-black wares. The carinated vessel, lid-cum-bowl, cup, dish, wide-mouthed heavy-rimmed jar, vase and *loṭā* are amongst some of the popular shapes. The vase in deep-black ware with grooved patterns and stamped designs around the neck but above the shoulder recalls typical examples from the medieval period of MASKI. The red ware is often painted in white pigment. The other material remains are not many. Three medieval copper coins are amongst the important antiquities, besides a stone plaque of Lakuliṣa, an image of Gaṇeśa in stone and a broken piece of halo in red sandstone carved with lotus design of the border. A cache of ill-baked terracotta animal figurines such as the bull, horse, bear (?) and ram and a few exotic play things have been recovered from this level.

About 2 km e. of the site on a high ground not far away from the bank of the Tungabhadra clusters of Megalithic burials [4.17.9] have been noticed, mostly in a damaged condition. Except a single stone circle all belong to the cist-circle type. The orthostats are seen arranged on the *svastika* pattern. The cists in several cases appear to be double-chambered, divided by upright slabs, and can be classed as transepted cists with antechamber. Whether there is a bench needs confirmation. The orthostats project out above the surface and the capstones are missing in all the cases. Often in s. orthostats a port-hole and an antechamber in front are also present. The diameters of the circles vary between 10.1 to 5.3 m. Unlike BRAHMAGIRI but like MASKI the major axis of all the cists is in n.-s. orientation.

—N.C. GHOSH

Satapar, Dt Rajkot. Early historical [4.18.2] site.

IAR 1958-9.

Satar, Dt Bharatpur. Site with PGW [11.14], black-and-red ware [11.6.3] and medieval ware.

IAR 1970-1.

Saterh-Lakshmipur, Dt Darbhanga. Ruins of *stūpas* of mud brick seemingly similar to those at LAURIYA-NANDANGARH.

IAR 1958-9.

Sathani, Dt Mainpuri. PGW [11.14] and early historical [4.18.1] site.

IAR 1971-2.

Sathar, Dt Allahabad. NBPW [11.16] and associated pottery.

IAR 1961-2.

Satikund, Dt Saharanpur. OCW [11.15] and red ware of the Sunga-Kushan assemblage.

IAR 1965-6.

Satkahonia, Dt Burdwan. Microliths (of unspecified nature).

IAR 1960-1.

Satkuta, Dt Sundargarh. Lower Palaeolithic [4.2] site.

Mohapatra, G.C., 1962, *Stone Age Cultures of Orissa*, Poona, p. 45.

Satmana, Dt Dhule. Artefacts ascribable to the post-Middle Stone Age (Middle Palaeolithic [4.3]) and pre-Late Stone Age (Mesolithic [4.5]) and Chalcolithic [4.14.6] habitation remains.

IAR 1964-5.

Satola, Dt Dhule. Chalcolithic [4.14.6] site with a rich collection of microliths. See UDDHAMGADH and PIMPLAS.

IAR 1958-9.

Saton, Dt Fatehpur. NBPW [11.16], Black-slipped Ware [11.13] and coarse and slipped red ware.

IAR 1962-3; 1967-8.

Satral, Dt Ahmadnagar. Series II (Middle Palaeolithic [4.5]) tools and Chalcolithic [4.14.6] remains.

IAR 1959-60.

Satrod Khurd, Dt Hissar. Pre-Harappa [4.8] remains at Satrod Khurd-1, -2 and -3 comparable with late SISWAL.

IAR 1966-7, *Haryana Studies in History & Culture*, p. 139. Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 124.

Satsal, Dt Bankura. Microliths (of unspecified nature).

IAR 1959-60.

Satti, Dt Belgaum. Neolithic [4.6.9] and Chalcolithic site [4.17.8] with remnants of an ash-mound [14.3].

IAR 1965-6, P.B. Desai Commemoration Vol., 1971, Dharwar, pp. 4-30.

Sattiyamangalam, Dt S. Arcot. Port-holed cists [4.17.9]. (Same as SATYAMANGALAM?).

AI, 4, 1947-8, p. 306.

Sattiyavedu. See SATYAVEDU.

Satur, Dt Tirunelveli. Megalithic [4.17.9] site with sepulchral urns.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Saturkha, Dt Dhule. Microliths (of unspecified nature).

IAR 1961-2.

Satwar, Dt Medak. Tools of Series II (Middle Palaeolithic [4.3]) and a few microliths (of unspecified nature).

IAR 1958-9.

Satwas, Dt Bharatpur. Kushan red ware and terracotta.

IAR 1971-2.

Satyamangalam, Dt Pudukkottai. Megalithic [4.17.9] site. (Same as SATTIYAMANGALAM?).

Manual of Pudukkottai State, 1944, 1, 1, p. 515-8.

Satyavedu, **Sattiyavedu**, Dt Chingleput. Lower Palaeolithic [4.2] site on the river Korttalar.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 172.

Saudag, Dt Mirzapur. Microliths (of unspecified nature).

IAR 1962-3.

Sauli-Chak, Dt Jammu. Late historical pottery and Gupta terracottas.

IAR 1962-3.

Saunakdih, Dt Varanasi. NBPW [11.16], associated Black-slipped Ware [11.13] and grey and red wares.

IAR 1961-2.

Saundatti, Dt Belgaum. Lower [4.2] and Middle [4.3] Palaeolithic and Megalithic [4.17.8] site with large passage chambers and round barrows.

IAR 1968-9, Sundara, A., 1975, *Early Chamber Tombs of 1. India*, Delhi, pp. 15-22.

Saundha, Dt Ambala. Remains of the early Christian age including Red Polished Ware [11.23].

IAR 1963-4.

Sauripur, Dt Agra. PGW [11.14] and NBPW [11.16] site. The site is associated with Jainism.

IAR 1958-9, Joshi, E.B., ed., 1965, *Uttar Pradesh Dt Gazetteers—Agra*, Lucknow, p. 22.

Savadi, Dt Dharwar. Stone axes, microliths (of unspecified nature) and fragments of grey ware of BRAHMAGIRI fabric.

IAR 1967-8.

Savadipalaiyam, Dt Coimbatore. Megalithic [4.17.9] site with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Savalda (21°31'; 74°19'), Dt Dhule, on the left bank of the Tapti, 20 km n.-e. of Nandurbar, a Tahsil headquarters and a railway station, where four Chalcolithic sites, sites 1 to 4, were discovered in 1958-9 (IAR 1958-9, p. 24) in the course of exploration. Of these, sites 1 and 4 are heavily eroded, the sparse cultural remains scattered in the form of microliths and painted potsherds on the surface of yellow silt. Site 2 is 60 m long and 30 m broad with about 60 cm thick occupational deposit from which were recovered the Savalda Ware [11.12], buff ware and Jorwe Ware [11.11]. Also noticed was an extended burial associated with bowls of Black-and-red Ware [11.15.3] akin to those in the Chalcolithic burials at TEKWADA on the Girna opposite BAHAL. The most important is Site 3, a small low mound e. of the village, measuring 120 m long and 60 m wide. It was here that for the first time the distinctive features of a class of painted ware, earlier found at CHINCHODA and other sites in the Dt, were confirmed and hence the ware was designated as Savalda Ware (Sali, 1963, pp. 207-10). Of medium-to-coarse fabric, the Ware is treated with a slip which has turned light-red, orange, pink, brown, chocolate, buff and their shades. The painted motifs chiefly in black and occasionally in purple, brown and red include, besides linear patterns, stylized fish, peacock, flying birds, arrows; arrowheads, saw-like motifs, fish-hooks and

plant motifs. The types are: the high-necked jar with squat body; dish; platter; dish-on-stand; trough or basin; bowl; ring-stand; and lid. Apart from the Savalda Ware the site has also yielded late Harappa red ware [11.4], buff ware and Jorwe Ware.

The site was excavated in 1959-60 by the ASI under R.V. Joshi and his associates (*IAR 1959-60*, p. 34). The occupational deposit, about 4 m thick, is divisible into two Pds, I and II. Pd I, Chalcolithic, has yielded the typical Chalcolithic black-painted red ware, besides a red ware of medium fabric, and grey ware both in coarse and fine fabrics. A few blades of chalcedony have also been obtained. The painted designs on the pottery include horizontal bands, hatched diamonds and triangles, loops, circles and parallel wavy lines connected to a horizontal band. Some of the important types in the red ware are: the jar with bevelled rim; jar with beaded rim and flanged shoulder; storage jar with splayed-out rim and cordoned shoulder decorated with cord-pattern; jar with beaked rim; and miniature jar with splayed-out rim and carinated shoulder. In this ware are also present a few specimens showing paring. The grey ware of fine fabric is represented by the jar with flaring rim and globular body. The types in the grey ware of coarse fabric include: the shallow dish with featureless rim; storage jar with splayed-out rim and carinated shoulder decorated with cord pattern; and thick and deep bowl with incurved rim and flat base.

Pd II marked by the occurrence of the Black-and-red ware, black ware and other types associated with the NBPW [11.6.3]. The painted pottery and huge storage jars of the preceding period are totally absent.

It seems the stratigraphic position of the Savalda Ware has not been fully revealed in the excavation. However surface observations at this site as also at KANDHRA and KAO THE (Site 1) in the same Dt shows that the Ware occupied a stratigraphic position below that of the late Harappa (Sali, 1972, p. 180). Interestingly enough in the recent excavations at DAIMABAD remains of the Savalda culture have been found below those of the late Harappa.

The Savalda Ware is not confined to the Tapti and Godavari valleys only. It has also been found in the Krishna valley in Dts Bijapur and Belgaum of Karnataka (Sundara, 1971, pp. 13-30).

(Savalda is also a Middle Palaeolithic, 4.3, site (*IAR 1966-7*).)

Sali, S.A., 1963, in *Jour. Asiatic Soc. Bombay*, 38; 1972, in Deo, S.B., ed. *Arch. Congress & Seminar*, Nagpur. Sundara, A., 1971, in Ritti, S., and Gopal, B.R., *Studies in Indian History & Culture*, Prof. P.B. Desai Felicitation Vol., Dharwar.—S.A. SALI

Savalgi, Dt Belgaum. Megalithic [4.17.8] site.

IAR 1966-7.

Savandurg, Dt Bangalore. Pointed-butt stone axes [4.6.9] as well as a large cist-circle cemetery, pottery and

iron objects were found.

Indian Antiquary, 10, 1881, pp. 1-12. *AI*, 4, 1947-8, p. 296.

Savne, Dt Dhule. Middle Stone Age (Mesolithic [4.3]) tools.

IAR 1962-3.

Sawaneka, Dt Shahjahanpur. The site situated at a distance of about 1.7 km to the n.-w. of the Copper Hoard [4.11] site of BAHARIA has yielded relics of the Kushan age.

Misra, V.D., 1977, *Some Aspects of Indian Arch.* Allahabad, p. 126.

Sawangi, Dt Parbhani. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1960-1.

Sawyerpuram (8°40'; 78°), Dt Tirunelveli, in the s.-e. part of the Dt noted by Foote (Foote, 1914 and 1916) as having the remains of a Microlithic culture [4.5]. Foote also collected a wind-polished handmade potsherd, which he thought was of Neolithic [4.6.10] association. It is one of the largest of the *teri* [9.5], with three microlithic sites: Kuttamputtur and Sawyerpuram on the s. and Kuttalanguam on the w. The implements, heavily stained with red hydrated ferric oxide, seemingly came from within the weathered sand of the original soil sections and are therefore likely to be older than the *teri* accumulation, certainly older than the red weathering. The chert, fossil wood and limpid quartz tools found by Foote were recorded as embedded in the red locus; this has been corroborated by later studies by Zeuner (Zeuner and Allchin, 1956). The most important result of his investigations is that it has been possible to compare and correlate the horizon of the fossil dunes in relation to the lagoon formed near them with the European Mediterranean climatic chronology and establish a link with one of three periods—late Monastirian, Epimonastirian or post-glacial. The third is the most likely and is eustatically related to the late Atlantic, approximately 4000 B.C. On this basis the sea level has fallen now by as much as 6 to 9 m from the level at the time of the Microlithic culture. Topographically however an even higher sea level at 15 m above the present mean sea level might have been a land-surface sustaining activity. All the *teri* sites are located on a raised sea level of at least 6 to 9 m height or more.

The ASI conducted intensive explorations in 1950 under N.R. Banerjee and the writer and this resulted in the discovery of more than a dozen Microlithic sites associated with different *teri* remnants and closely or directly related to the ferruginized hard pan horizon (Krishnaswami *et al.*, 1951). This tool culture by its raw material, technique and retouch can be divided into a variety of tool facies giving an insight into the nature of the activities of its authors. The sites besides Sawyerpuram discovered during the survey are MEGNAPURAM, NAZARETH, KOOTAMPULI, KULATTUR, KAYAMOLI, KOOHANKULI, PUNTHANTARUVAI,

MANADU, SURANGUDI and SAYALGUDI. These *terris* without any implement-bearing horizon continue along the tip of the peninsula and around the Kumari cape into without any implement-bearing horizon continue along the tip of the peninsula and around the Kumari cape into Kerala. The tools from these sites are fashioned out of a variety of silicious rocks like agate, jasper and chert, besides limpid or crystal quartz and fossil wood, the last three being the material at Sawyerpuram, and include types ranging from scrapers, borers, blades, crescents and burins to points, triangles, trapezes and transverse arrowheads. Some of the leaf-shaped points with minute pressure-flaking are also to be seen at sites in Ceylon (Aiyappan, 1945).

Aiyappan, A., 1965, in *Spolia Zeylanica*, 24, pp. 145-54. Foote, R.B., 1914, *Foote Collection of Indian Prehistoric & Protohistoric Antiquities, Catalogue Raisonné*, Madras; 1916, *Notes on their Ages & Distribution*, Madras. Krishnaswami, V.D., Banerjee, N.R., & Soundara Rajan, K.V. 1951, 'Microliths of Tinnevely', read at Indian Science Congress, Calcutta. Zeuner, F.E., 1952, *Dating the Past*, London; 1953, in *Geol. Rundschau*, 44, pp. 242-53; 1955, *Acta Congress International Quaternary*, 4. Zeuner, F.E., & Allchin, B., 1956, in *AI*, 12, pp. 4-21.—K.V. SOUNDARA RAJAN

Sayalgudi. See SAWYERPURAM.

Sayamalai, Dt Tirunelveli. Prehistoric (of unspecified nature) site.

ASI—AR 1936-7. Cammiade, L.A., *Gazetteer of Tinnevely Dt*, p. 409.

Sayavanam, Dt Thanjavur. Early historical [4.18.12] site.

IAR 1960-1.

Seal, Dt Patiala. Sherds of the PGW [11.14] and Śunga-Kushan red ware.

IAR 1964-5. Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 122.

Sedhi, Dt Bijnor. PGW [11.14] site.

IAR 1959-60.

Segta, Dt Ambala. PGW [11.14] site.

IAR 1963-4. Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 126.

Sejakkpur, Dt Surendranagar. Microliths including parallel-sided blades and fluted cores as well as Red Polished Ware [11.23].

IAR 1957-8.

Sej-Karad hills, Dt Sehore. A number of microliths (of unspecified nature) were found in the rock-shelters.

IAR 1960-1.

Sejpur, Dt Bharuch. Late Stone Age (Mesolithic [4.5]) site.

IAR 1969-70.

Sekadda, Dt Birbhum. Microliths (of unspecified nature).

IAR 1963-4.

Sekarpura, Dt Bhilwara. Microliths (of unspecified nature).

IAR 1958-9.

Sekkambatti, Dt Dharmapuri. Megalithic [4.17.9] site.

with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Selbalgiri, Dt Garo Hills. Selbalgiri-1 yielded a large number of potsherds and stone axes. Selbalgiri-2, situated at a distance of about 2 km to the s.-w. on a ridge, yielded a highly developed flake-and-blade industry, a somewhat primitive microlithic industry and primitive tools such as handaxes, discs and picks betraying Palaeolithic traditions [4.2]. Points, borers, awls, blades, arrowheads, spearheads, huge flakes and fabricators are noteworthy finds. Further excavation revealed a geometric and non-geometric microlithic industry with pottery. Selbalgiri-3 has Early (Lower Palaeolithic [4.2]), Middle (Middle Palaeolithic [4.3] and Late Mesolithic [4.5]) Stone Age industries. The site has also Neolithic [4.6.6.] tools such as axes, near cylindrical chisels and a spearhead.

IAR 1965-60; 1967-8; 1970-1.

Selbari, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1965-6.

Sellukudi, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 1, 1, pp. 515-8.

Selot, Dt Bharuch. Middle Palaeolithic [4.3] and early historical [4.18.2] site.

IAR 1968-9.

Seman, Dt Sonapat. PGW [11.14] site. See YAMUNA RIVER.

Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 125.

Sembattur, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 1, 1, pp. 515-8.

Sembua, Dt Ranchi. A polished but crude chisel of schist was found.

Roy, S.C., 1916, in *Jour Bihar & Orissa Res. Soc.*, 2, p. 72.

Sempakkam-kottamalai, Dt Chingleput. Megalithic [4.17.9] site.

AI, 22, 1966, p. 30.

Semtipalayam, Dt Coimbatore. Megalithic [4.17.9] cairn circles.

IAR 1962-3.

Senegutu, Dt Ranchi. A broad polished axe of gneiss was found.

Roy, S.C., 1916, in *Jour. Bihar & Res. Soc.*, 2, p. 72.

Sengalur, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 1, 1, pp. 515-8.

Sengamedu, Dt S. Arcot. Urn burials [4.17.9] without the bounding stone circles and a finely polished Neolithic [4.6.10] celt with a pointed butt were found.

IAR 1961-2. AI, 22, 1966, p. 33.

Sengamedu, Dt S. Arcot. Urn burials [4.17.9] without the bounding stone circles and a finely polished Seoti and Tundiari rivers.

IAR 1962-3.

Senganam, Dt Tiruchchirappalli. Megalithic [4.17.9]

site with stone circles with single or double rings, cairn circles and dolmenoid cists, mostly of undressed boulders. Noteworthy was a cairn circle with fillings rising to a height of about 1½ m.

Gururaja Rao, B.K., 1971, in *Prof. Nilakanta Sastri Felicitation Vol.*, Madras.

Sengarai, Dt Chingleput. Megalithic [4.17.9] site.

AI, 22, 1966, p. 28.

Sengodachennahalli, Sonningayakkanahalli, Dt Dharmapuri. Mesolithic [4.17.9] sites with port-holed cists.

IAR 1967-8.

Sengulam, Dt Madurai. Urn burials [4.17.9].

IAR 1957-8.

Senigaram, Dt Karimnagar. Middle Palaeolithic [4.3] site.

Gururaja Rao, B.K., ed., 1978, *Decade of Arch. Studies in s. India*, p. 48.

Seoni¹, Dt Hoshangabad. Flake and blade tools.

IAR 1960-1.

Seoni^F, Dt Seoni. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1961-2.

Sepauwa, Dt Allahabad. Late Stone Age (Mesolithic [4.5]) site.

IAR 1963-4.

Seraikalla, Dt Singhbhum. Site with Neolithic [4.6.5] celts, pounders, saddle querns, chisels and hammer-stones.

IAR 1961-2.

Seringapatam, Srirangapatna, Dt Mandya. Neolithic [4.6.9] celts, hammer-stones and cores.

Footo, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Seripalle. See SRISAILAM.

Serpar, Dt Chanda. Late Stone Age (Mesolithic [4.5]) site.

IAR 1969-70.

Sethiyakkapalayam, Dt Coimbatore. Megalithic cairn circles.

IAR 1962-3.

Setpura, Dt Ganganagar. Rang Mahal [11.24] site in the SARASVATĪ VALLEY.

Unpublished.

Settipalayam, Dt Dharmapuri. Megalithic [4.17.9] site with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Settipetta, Dt Chittoor. Port-holed cists [4.17.7].

AI, 4, 1947-8, p. 306.

Settur, Dt Madura. Megalithic [4.6.9] site about 350 m s. of the village with terracotta sepulchral urns.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Sevalur, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 1, 1, pp. 515-8.

Sevapuri, Dt Morena. A cliff section on the bank of the Chambal near the village yielded handaxes and scrapers

belonging to the Lower Palaeolithic Age [4.2] as also a few Middle Palaeolithic [4.3] tools consisting of scrapers, points etc.

IAR 1972-3.

Sewali, Dt Rohtak. Early historical [4.18.1] site.

Jour. Haryana Studies, 3, 1, p. 6.

Sewar, Dt Bharatpur. OCW [11.5], PGW [11.14] and black-and-red ware [11.6.3].

IAR 1965-6.

Shahabad¹, Dt Gulbarga. Megalithic [4.17.8] stone circles.

Jour. Geological Survey of Hyderabad, 4, 1, p. 55. *IAR* 1963-4. Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, p. 62.

Shahabad², Dt Hardoi. Sherds of PGW [11.14] and NBPW [11.16], a few Gupta terracotta figurines and a medieval copper coin were found. Copper Hoard [4.11] objects had been found earlier.

IAR 1965-6. Also information from S. Asthana.

Shahabad Karad. See KHARVAI.

Shahabiya, Dt Mirzapur. Rock-shelters with paintings [13].

Misra, V.D., 1977, *Some Aspects of India Arch.*, Allahabad, p. 55.

Shahada, Dt W Khandesh. Microliths and sometimes neoliths were also found in association with the black-on-red painted pottery and coarse grey ware. The site contained the remains of burials and black-and-red ware bearing graffiti. See DHAMDAI.

IAR 1957-8.

Shahadkarad¹, Dt Bhopal. Kayatha Ware [11.7] site. (Same as Shahadkarad²?).

Wakankar, V.S., 1976, in *Arch. Congress & Seminar, 1972*, Kurukshetra.

Shahadkarad², Dt Raisen. Sherds of Malwa Ware [11.10]. (Same as Shahadkarad¹?).

IAR 1966-7.

Shahadkarad³, Dt Sehore. Painted rock-shelters [13].

IAR 1959-60; 1966-7.

Shahajapur, Dt Ahmadnagar. Tools of Series II (Middle Palaeolithic [4.3]) and microliths (of unspecified nature).

IAR 1960-1.

Shahgarh, Dt Sagar. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAR 1964-5.

Shahpatan, Dt Banda. Parallel-sided flakes, backed blades, scrapers, notched blades, borers, points and fluted cores and polished stone axes and hammer stones.

IAR 1961-2.

Shahpura, Dt Mandla. Middle and Late Stone Age (Middle Palaeolithic [4.2] and Mesolithic [4.5]) site.

IAR 1963-4.

Shahpur-Goriaian, Dt Gurdaspur. Early historical [4.18.1] remains. See ACHAL-SAHEB.

IAR 1961-2.

Shaikapur, Dt Wardha. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1959-60.

Shajipur, Dt Dhule. Tools of Series II (Middle Palaeolithic [4.3]).

IAR 1957-8.

Shakaur¹, Dt Gulbarga. Chalcolithic [4.14.8] site; also stone alignment [4.17.8]. (Same as following?)

Megalithic & Other Remains in the Deccan. Hyderabad, 1941, pp. 83-4.

Shakapur², Dt Gulbarga. Late Stone Age (Mesolithic [4.5]) site in the Amarja valley. (Same as preceding?)

Nagaraju, S., 1971, in *Prof. K.A. Nilakanta Sastri Felicitation Vol.*, Madras.

Shakarpur Road, Dt Saharanpur. PGW [11.14] site.

IAR 1965-6.

Shakhupur Manchuri, Dt Karnal. Late Harappa [4.10] site.

Suraj Bhan & Shaffer, J.G., 1978, in *Man & Environment*, 2, p. 62.

Shakmirkheda. See NAKLOI.

Shakoorganj, Dt Bulandshahr. Black-and-red ware [11.6.3], PGW [11.14], grey ware Black-slipped Ware [11.13] and red ware of the Suha-Kushan period.

IAR 1970-1.

Shakopur, Dt Gulbarga. Mesolithic [4.5] site.

Prof. K.A. Nilakanta Sastri Felicitation Vol., 1971, pp. 218-23.

Shala, Dt Dhule. Early historical [4.18.9] site with black-and-red ware. (Same as following?)

IAR 1958-9.

Shala-Pamkatla, Dt Dhule. Palaeolithic (of unspecified nature) site. (Same as preceding?)

IAR 1958-9.

Shamaria, Dt Chittaurgarh. Near the place were found heavily rolled Palaeolithic [4.2] tools, mostly made on flakes. They included ovates and cleavers, besides a fine specimen of Acheulian handaxe.

IAR 1957-8.

Shamgarh, Dt Karnal. Late Harappa [4.10] site comparable with MITATHAL II B.

Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 125.

Shamlaji, **Shamalaaji** (23°41'; 73°26'), Dt Sabar-Kantha, a small village well-known as a centre of pilgrimage to the temple of Gadadhara.

Pre-Fort Pd (c. beginning of the Christian era). The earliest habitation was developed by iron-smelters, the raw material being available within a range of about 45 km. The tuyères for blowers [16.9.2] and crucibles [16.4] with iron in it are interesting. The excavation has also yielded a lump of iron and an iron chisel with straight edge and tang. The inhabitants built structures with mud and burnt brick set in mud mortar. This habitation requires further work for a detailed study, but in the present state of information it seems to belong to about the beginning of the Christian era.

Fort Pd (1st to 4th centuries A.D.). As the place was an important station on the road connecting Gujarat with s. Rajasthan the site was fortified as a brick fort, which was

often breached but was repaired. The remains of brick structures and a variety of ceramics including the amphora [11.19] have been obtained. Besides there is a variety of objects including a bull, a carnivore, head of a woman, votive tanks [12.11] and pallet of terracotta, shell bangles, copper antimony rods [18.1], lead *kundalas*, iron knife and nails. There is also an interesting circular lead coin with a human figure in flying or jumping attitude on the obverse and a lion on the reverse.

Post-Fort Pd (A.D. 400-1000). Even after the destruction of the fort the habitation continued in a flourishing condition. It is represented by seven structures, hearth, etc. The early ceramic traditions continue but the amphora is absent. Towards the end of the fourth layer the site seems to have been abandoned for some time. There is also a continuity of local wares. The other objects are copper bangles, antimony rods, dice [6.7.1] of shell and bone, a sitting bull, a plaque with lion's head, a pestle, a ball, bangles a *chalam* (?) of stone, glass bangles, terracotta discs and an iron sickle.

Medieval Pd (1500-1800). This is represented by glazed pottery, plain red and burnished red, as well as plain and burnished black ware and four structures of brickbats. Of the other antiquities mention may be made of a terracotta bird and dice, copper ring, a carpenter's head, a pestle, a ball, bangles, a *chalam* (?) of stone, glass strips of iron.

The large temple of Gadadhara was also built at this time. After this erection several other temples were built in the area. Some of them have preserved older sculptures.

Mehta, R.N., & Patel, A.T., 1967, *Excavation at Shamalaji*, Baroda.—R.N. MEHTA

Shamnera, Dt Ujjain. Early historical [4.18.1] site.

IAR 1971-2.

Shampur, Dt Hardoi. PGW [11.14] and NBPW [11.16] site.

IAR 1962-3.

Shamsherganj-Maholi, Dt Mainpuri. PGW [11.14] and NBPW [11.16] site.

IAR 1961-2.

Shankargarh Kot, Dt Ghazipur. Early historical site yielding black ware and red ware.

Bharati, 8, 1, 1964-5, p. 125.

Shankatirtha. See GODAVARI VALLEY.

Shankhadal, Dt Dharwar. Early historical [4.18.11] site. See ADERKATTI.

IAR 1961-2.

Shankhudhar, Dt Mandsaur. Palaeoliths (of unspecified nature).

IAR 1958-9.

Shegunashi, Dt Belgaum. Chalcolithic [4.14.8] site.

IAR 1965-6. P.B. Desai Felicitation Vol., Dharwar, 1971, pp. 4-30.

Sheh Chulli, Dt Kurukshetra. PGW [11.14] site.

Suraj Bhan & Shaffer, J.G., 1978, in *Man & Environment*, 2, p. 62.
Shehra, Dt Panch Mahals. Early historical [4.18.2] settlement yielding Red Polished ware [11.23], black-and-red ware, brick structures, beads, bangles and terracotta objects.

Sonawane, V.H., 1976, in *Arch. Congress & Seminar*, 1972, Kurukshetra.

Shekhapur. See PURNA VALLEY.

Shelari Maruti, Dt Bhandara. In the vicinity of the temple of that name microliths (of unspecified nature) were found.

IAR 1969-70.

Shelgi, Dt Bijapur. Middle Palaeolithic [4.3] and early historical [4.18.11] site.

Information from A. Sundara.

Shelu, Dt Dhule. Microliths associated with ochre-coloured pottery. See DHAMDAI.

IAR 1957-8.

Shembatu Paracheri, Dt Tirunelveli. Megalithic [4.17.9] site.

ASI—AR 1902-3.

Shenpur, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1962-3.

Shenvadigaon, Dt Ahmadnagar. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1955-6.

Sheoge, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1962-3.

Sheonagri, Dt Meerut. PGW [11.14] site.

IAR 1966-7.

Sheorajpur, Dt Kanpur. Three anthropomorphic figures of copper [4.11].

AI, 7, 1951, pp. 20, 29.

Sheraswadgaon, Dt Ahmadnagar. Microliths of the Chalcolithic period [4.14.6].

IAR 1959-60.

Sherdi¹, Dt Jamnagar. Microlithic (of unspecified nature) site.

IAR 1954-5.

Sherdi², Dt Junagadh. Early Stone Age (Lower Palaeolithic [4.2]) tools and remains of the Ksatrapa period, besides silver-coated copper coins of Kumāragupta and Red Polished Ware [4.23].

IAR 1963-4.

Sherikan, Dt Ganganagar. Rang Mahal [11.24] site in the SARASVATI VALLEY.

Unpublished.

Sherpur¹, Dt Aligarh. Early historical [4.18.1] site.

IAR 1962-3.

Sherpur², Dt Ganganagar. Site, 7 km from Bhadra (29°6'; 75°12'), in the DRSADVATI VALLEY, yielding pre-Harappa SOTHI/KALIBANGAN I [11.2] ware.

Dikshit, K.N., 1979, in *Man & Environment*, 3, pp. 105-6.

Sherpur³ (Gujarat), Dt Saharanpur. Harappa [4.9] and OCW [11.5] site.

IAR 1966-7.

Shetti, Dt Dhule. Late Stone Age (Mesolithic [4.5]) and microlithic (of unspecified nature) tools.

IAR 1960-1.

Shettihalli, Dt Mandya. Neolithic [4.6.9] mace-head.

Footo, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 76.

Shevaroy hills, Dt Salem. Neolithic [4.6.10] celts, hammers, slick stones, mace-heads and pointed-butt polished stone axes.

Footo, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras. Brown, J.C., 1917, *Cat. Prehistoric Antiquities in the Indian Museum*, Calcutta, Simla.

Shidalphadi, Dt Bijapur. Tools of Series I and II (Lower and Middle Palaeolithic [4.2, 3]) were found in a cave and its surroundings, as also grey ware of BRAHMAGIRI fabric, parallel-sided blades, lunates, etc.

IAR 1959-60; 1965-6.

Shigao, Dt Goa. Early Stone Age (Lower Palaeolithic [4.2]) site on the Dudhasagar river.

IAR 1964-5.

Shihori, Dt Ahmadabad. Early historical [4.18.2] site.

IAR 1966-7.

Shikarganj, Dt Shahdol. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1961-2.

Shikarpur¹, Dt Pune. Huge basaltic or dolerite flakes were found in a highly cemented gravel bed of the river Vel. A fine chert point of Series II (Middle Palaeolithic [4.3]) was found in the river bed.

IAR 1957-8.

Shikarpur², Dt Saharanpur. OCW [11.5] and washed grey ware.

IAR 1963-4.

Shikarpura, Dt Jodhpur. Site on the Luni river with Series II (Middle Palaeolithic [4.3]) tools.

IAR 1958-9.

Shillong, Dt Shillong. A large number of megaliths [4.17.6], especially menhirs, of uncertain date.

IAR 1971-2.

Shilpada, Dt Dhule. Palaeolithic (of unspecified nature) tools.

IAR 1958-9.

Shinda, Dt Dhule. Microliths associated with ochre-coloured pottery. See DHAMDAI.

IAR 1957-8.

Shirgaon, Dt Pune. Early (Lower Palaeolithic [4.2]) and Late Stone Age (Mesolithic [4.5]) site.

IAR 1969-70.

Shirguppi, Dt Bijapur. Ash-mound [14.3]; Neolithic [4.6.9]-Chalcolithic [4.14.8] and early historical [4.18.11] site.

IAR 1965-6. Prof. K.A. Nilakanta Sastri Felicitation Vol., Madras, 1971. P. B. Desai Felicitation Vol., Dharwar, 1971.

Shirnahalli, Dt Dharwar. Early historical [4.18.11] site.

IAR 1962-3.

Shirol, Dt Dharwar. Neolithic [4.6.9] site.

IAR 1968-9.

Shirvad, Dt Dhule. Open camp site yielding large irregular as well as fluted cores, blades, scrapers, points, etc.

IAI 1960-1.

Shivapur, Dt N. Kanara. Early historical [4.18.11] site.

Karnataka Bharati, 8, 3, p. 96.

Shivayogimandir, Dt Bijapur. Lower Palaeolithic [4.2] site.

Progress Rep. Kannada Res. Inst., 1953-7, p. 24. IAR 1955-6.

Shivna valley. Sites with tools of Series I (Lower Palaeolithic [4.2]): Kanthar; Multanpura; Mahadeo-Ghat (Mandsaur); Smanan-Ghat (Mandsaur); Dhikola; Chikla; Nahargarh; Alvi-Mahadeo; Itali. Sites with tools of Series II (Middle Palaeolithic [4.3]): Kharkimata; Khanpura (Mandsaur); Suara, Borkheri. Sites with microliths (Mesolithic [4.5]): Ram-Ghat (Mandsaur); Alvi-Mahadeo.

IAI 1956-7.

Shivpur, Dt Bijapur. Microliths (of unspecified nature).

IAI 1961-2.

Shivpuri, Dt Ganganagar. Site with grey ware, Rang Mahal Ware [11.24] and a shell bangle in the SARASVATI VALLEY.

Unpublished.

Shivpur Khurd, Dt Bijapur. Sherds of Red Polished Ware [11.23].

IAI 1957-8.

Shiyali, Dt Bharuch. Lower and Middle Palaeolithic [4.2, 3], Mesolithic [4.5] and early historical [4.18.2] site.

IAI 1971-2.

Sholur, Dt Nilgiri. Megalithic [4.17.9] site with cairns yielding pottery, iron implements, etc.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Shondat, Dt Meerut. Grey ware associated with NBPW [11.16], red ware of Sunga-Kushan assemblage and medieval ware.

IAI 1962-3.

Shovali, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAI 1964-5.

Shrinagar (21°35'; 69°34'), Dt Junagadh. Late Harappa [4.10] site corresponding to RANGPUR II B & II C.

AI, 18 & 19, 1962 & 1963, p. 207.

Shrisule, Dt Ahmadnagar. Tools of Series II (Middle Palaeolithic [4.3]) and microliths (of unspecified nature).

IAI 1960-1.

Shukartal, Dt Saharanpur. OCW [11.15] site.

IAI 1965-6.

Shukartar, Dt Muzaffarnagar. Red ware of the Sunga-Kushan assemblage and medieval ware.

IAI 1962-3.

Shyambati, Dt Birbhum. Microliths (of unspecified nature) and flakes.

IAI 1961-2.

Sialpura, Dt Udaipur. Microliths (of unspecified nature), black-and-red ware (of AHAR² [4.14.1] affinity?) and associated pottery.

IAI 1956-7.

Siddapur¹, Dt Bangalore. Microliths (of unspecified nature).

IAI 1959-60.

Siddapur², Dt Bijapur. Microliths (of unspecified nature).

IAI 1961-2.

Siddapura, Dt Banda. The microlithic tools collected at the site consisted of parallel-sided blades, pen-knife blades, borers, trapezes, scrapers and arrowheads in quartz, agate, chalcedony, etc. Tools made of bone and horn were also suspected and an admixture of crude pottery noticed.

IAI 1955-6.

Siddeswar, Dt Parbhani. Series II (Middle Palaeolithic [4.3]) tools.

IAI 1960-1.

Siddharajulingapuram. See SRISAILAM.

Siddhavattam, Dt Cuddapah. A Lower Palaeolithic [4.2] handaxe was found on the bank of the Cheyyar river.

IAI 1957-8.

Siddheswaram. See SRISAILAM.

Siddipet, Dt Medak. Megalithic [4.17.7] stone circles.

IAI 1961-2.

Sidenur, Dt Dharwar. Megalithic [4.17.8] stone circles. Also early historical [4.18.11] material. See HANDIGNUR.

IAI 1958-9.

Sidhada, Dt Banas-Kantha. Painted red ware.

IAI 1964-5.

Sidhi, Dt Mirzapur. Black-and-red ware (of unspecified nature).

IAI 1962-3.

Sidumbar, Dt Valsad. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAI 1964-5.

Sidut-ka-Kot, Dt Ghazipur. NBPW [11.16] site.

IAI 1963-4.

Sigavadi, Dt Mysore. Megalithic [4.17.8] cairn circles.

IAI 1962-3.

Sigoh, Dt Chittaurgarh. The Palaeolithic (of unspecified nature) site on the bank of the Kadamli had also microliths of chalcedony and agate in the loessic mounds on the river bank. Lunates, triangles and points were some of the typical types.

IAI 1954-5.

Sigur Ghat, Dt Nilgiri. Megalithic [4.17.9] site.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Sihawal, Dt Sidhi. Tools of the Early and Middle Stone (Lower and Middle Palaeolithic [4.2, 3]) Ages.

IAR 1962-3.

Sihbi, Dt Gurgaon. PGW [11.14] site.

IAR 1969-70. Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 126.

Sihora, Dt Hamirpur. The bed of the Dhasan yielded Series II (Middle Palaeolithic [4.3]) tools.

IAR 1960-1.

Sijaul, Dt Jullundur. Early historical [4.18.1] mound yielding red and plain grey wares.

IAR 1972-3.

Sijua, Dt Midnapur. Chalcolithic [4.14.4] site on the Kangsavati yielding black-and-red and lustrous red wares.

IAR 1968-9.

Sikadi, Dt Ghazipur. Black-slipped Ware [11.13] similar to that from RAJGHAT⁴.

IAR 1962-3.

Sikandarkhera, Dt Ujjain. Middle Age (Middle Palaeolithic [4.3]) site.

IAR 1971-2.

Sikandarpur¹ -1 and -2 (29°32'; 75°6'), Dt Hissar. Rang Mahal [11.24] site.

IAR 1966-7, 1967-8.

Sikandarpur², Dt Varanasi. Black-and-red Ware [11.6.3] and NBPW [11.16] site.

IAR 1963-4.

Sikariganj, Dt Gorakhpur. Black-and-red Ware [11.6.3] and NBPW [11.16] site.

IAR 1963-4.

Sikkal, Dt Thanjavur. Habitational deposit essentially characterized by fine Megalithic Black-and-red Ware [11.15] in the lower levels and a crude red ware in the upper ones.

IAR 1964-5.

Sikligarh, Dt Purnea. A pillar resembling an Aśokan monolith was found.

IAR 1957-8.

Sikrava, Dt Gurgaon. PGW [11.14] and early historical [4.18.1] site.

Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.

Sikrera, Dt Muzaffarnagar. OCW [11.5], PGW [11.14], grey ware associated with NBPW [11.16], Black-slipped Ware [11.13], red ware of the Śuṅga-Kushan assemblage and medieval ware.

IAR 1962-3.

Sikri¹, Dt Muzaffarnagar. PGW [11.14], grey ware, Śuṅga-Kushan ware and medieval glazed ware.

IAR 1963-4.

Sikri², Dt Saharanpur. OCW [11.5] site.

IAR 1963-4; 1964-5.

Silana (Bade ala), Dt Rohtak. Pre-Harappa [4.8] site.

Jour. Haryana Studies, 3, 1, p. 6.

Silanwad, Dt Nagaur. Microliths (of unspecified nature).

IAR 1956-7.

Silayuman, Dt Madurai. Megalithic [4.17.9] habitation site.

IAR 1956-7.

Sildah, Dt Midnapur. Microliths (of unspecified nature).

IAR 1960-1; 1961-2.

Silegaon, Dt Ahmadnagar. Microliths (of unspecified nature).

IAR 1958-9.

Silgundi, Dt Bijapur. Middle Palaeolithic [4.3] site.

Pappu, R.S., 1974, *Pleistocene Studies in the Upper Krishna Basin*, Pune, p. 35.

Silipunji, Dt Mayurbhanj. Neolithic [4.6.7] tools.

IAR 1958-9.

Silpura, Dt Jabalpur. Microliths (of unspecified nature).

IAR 1959-60.

Silwani, Dt Ganganagar. Site in the SARASVATĪ VALLEY with PGW [11.14], impressed pottery associated with PGW, Rang Mahal Ware [11.24], shell bangles and beads.

Unpublished.

Simlanda, Dt Ujjain. Historical site (of unspecified nature).

IAR 1971-2.

Simoi, Dt Rajkot. Early historical [4.18.2] site near Sultanpur.

IAR 1958-9.

Simoni, Dt Junagadh. Red Polished Ware [11.23] site.

IAR 1957-8.

Simrol, Dt Indore. Chalcolithic [4.14.5] site yielding Malwa [11.10], Ahar² [11.6.2] and Kayatha [11.7] Wares.

IAR 1970-1.

Sina, Dt Ahmadnagar. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1962-3.

Sind valley, Dt Srinagar. Chopper-type tools and scrapers were collected around Prang and Wusan in the valley.

IAR 1963-4.

Sindagi, Dt Belgaum. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3]) tools.

IAR 1963-4.

Sindganham, Dt Dhule. Late Palaeolithic [4.2] and Late Stone Age (Mesolithic [4.5]) tools.

IAR 1960-1.

Sindgeri, Dt Bijapur. Chalcolithic [4.14.8] site.

Jour. Karnataka Univ., 4, pp. 183-200.

Sindgi (16°12'; 75°44'), Dt Bijapur. Lower and Middle Palaeolithic [4.2, 3] site. See GHATAPRABHA VALLEY.

Sindhai, Dt Valsad. Middle Palaeolithic [4.3] and Late Stone Age (Mesolithic [4.5]) site.

IAR 1968-9.

Sindhla, Dt Chanda. Two Megalithic [4.17.6] stone circles.

IAR 1959-60.

Sindhogi, Dt Belgaum. Megalithic [4.17.8] site.

Bull. Deccan College Res. Inst., 11, 1, p. 66. Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 24-6.

Sindhuvalli, Dt Mysore. Megalithic [4.17.8] burials of cairn and cist types.

IAR 1963-4.

Sindibong, Dt Darjeeling. Neolithic [4.6] site.

IAR 1962-3.

Sindurpur, Dt Purulia. Middle and Late Stone Age (Middle Palaeolithic [4.3] and Mesolithic [4.5]) site. See DADHA.

IAR 1967-8.

Sindursi, Dt Jabalpur. Microliths (of unspecified nature).

IAR 1960-1.

Sindurtopa, Dt Birbhum. Black-and-red Ware [11.6.5] site.

IAR 1971-2.

Singana, Dt Surat. Lower and Middle Palaeolithic [4.2, 3] and Mesolithic [4.5] site.

IAR 1967-8.

Singanahal, Dt Raichur. Neolithic [4.6.9] site. (Same as following?)

IAR 1970-1.

Singanahala, Dt Raichur. Chalcolithic [4.14.8] site. (Same as preceding?)

Karnataka Bharati, 6, 1, pp. 64-75.

Singanapalli, Dt Kurnool. Trial digging revealed that the material equipment was that of a prosperous agricultural community living in a large village. It is believed to have adopted the painted pottery tradition of the post-Harappa Chalcolithic cultures of w. India [4.14.7] but had not yet taken kindly to the use of the potter's wheel. The perforated vessels are reminiscent of similar Harappa [11.3] jars. Disc beads of white steatite in the various sizes, microbeads of shell and steatite bangles show Harappa affinities. The present evidence suggests a date ranging from 1600 to 1400 B.C. Other sites in the Dt yielding painted pottery and Neolithic implements in large quantities are: Ramapuram, Patapadu, Sivavaram and Pusalapadu.

IAR 1967-8.

Singanpur, Dt Raigarh. Painted rock-shelters [13]. Palaeoliths were found in the shelters and at the foot of the hill.

Ghosh, M., 1932, *Rock Paintings & other Antiquities*, Mem. ASI, 24.

Singaoda, Dt Ujjain. Middle Stone Age (Middle Palaeolithic [4.3]) and early historical [4.18.7] site.

IAR 1971-2.

Singapur, Dt Karimnagar. Near the village 30 km s.-e. of Karimnagar there are a number of rough stone circles spread over a large area about 700 m to the n. of the village. The larger circles are 10 to 12 m in diameter. Remains of dolmens exist in the middle of some of them.

Cousens, H., 1900, *List of Antiquarian Remains in H.H. Nizam's Territories*, Calcutta.

Singar, Dt Gurgaon. PGW [11.14] site.

Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.

Singarayakonda, Dt Prakasam. Lower [4.2] and Middle Palaeolithic [4.3] site.

Aiyappan, A., 1942, *Manley Collection of Stone Age Tools*, Mem. ASI, 68.

Singari, Dt Pali (wrongly stated to be Marwar). Site on the river Guhiya with Series I and II (Lower and Middle Palaeolithic [4.2, 3] tools).

IAR 1958-9.

Singava, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1966-7.

Singawada, Dt Shajapur. Malwa Ware [11.10] and white-painted black-and-red ware.

IAR 1960-1.

Singera-ka-Kot, Dt Ghazipur. Black-and-red Ware [11.6.3].

IAR 1963-4.

Singh, Dt Rupnagar. PGW [11.14] site.

IAR 1962-3; 1963-4. Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra.

Singhadua ala, See RINDHANA.

Singhanpur, Dt Raigarh. Lower and Upper Palaeolithic [4.3, 4] tools from rock-shelters [13].

Ghosh, M., 1932, *Rock Paintings & Other Antiquities of Prehistoric & Later Times*, Mem. ASI, 24.

Singhpur, Dt Sagar. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1961-2.

Singhuwa, Dt Hissar. Harappa [4.9] site. (Same as SINGHWA?).

Silak Ram, 1972, unpublished thesis, Kurukshetra Univ.

Singhvaram, Dt Mahbubnagar. A few tools of Series II (Middle Palaeolithic [4.3]) were discovered on the left bank of the Tungabhadra.

IAR 1957-8.

Singhwa, Dt Hissar. Pre-Harappa [4.8] site comparable with the Degenerate SISWAL. (Same as SINGUWA?). See YAMUNA RIVER.

Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 125.

Singrali, Dt Shahdol. Tools of the Early and Middle Stone (Lower and Middle Palaeolithic [4.2, 3] Ages).

IAR 1962-3.

Singraur, Dt Allahabad. The site on the left bank of the Ganga, 32 km up Allahabad, yielded sherds of the NBPW [11.16] and fine grey ware, no painted sherd having been noticed.

IAR 1955-6.

Singupuram, Dt Srikakulam. Rouletted Ware [11.21], black polished ware and black-and-red ware.

IAR 1961-2.

Sini¹, Dt Bolangir. Microliths (of unspecified nature.)

IAR 1963-4.

Sini² (22°48'; 85°54'), Dt Singhbhum. A mound near Sini railway station on the river Sanjai yielded from various levels stone implements, charcoal, burnt clay, bone fragments, iron objects, carbonized rice and handmade and wheel-made pottery. Noteworthy was

the occurrence of iron objects in association with a large number of polished stone axes and carbonized rice in a pit. Neolithic [4.6.5] implements were collected from sites near Sini. See CHAKRADHARPUR.

IAR 1962-3; 1966-7.

Sinner, Dt Ahmadnagar. Painted pottery with microliths (of unspecified nature).

AI, 9, 1953, p. 68.

Sipawara, Dt Shajapur. Chalcolithic [4.14.5] site yielding Kayatha [11.7] Ahar² [11.6.2] and Malwa [11.10] Wares and punch-marked and cast copper coins [3.1].

IAR 1969-70.

Sipli-Pada, Dt Dhule. Late Stone Age (Mesolithic [4.5]) tools.

IAR 1964-5.

Siragambi, Dt Dharwar. Early historical [4.18.11] site. Piece of a neolith was also found.

Progress Rep. of Kannada Res. in Bombay State, 1947-52, p. 22.

Sirangala, Dt Coorg. Port-holed cists [4.17.8].

Rea, A., 1894, *List of Architectural & Arch. Remains in Coorg.*, ASI, New Imperial Series, 17.

Sirasgaon Kanta. See GHOD VALLEY.

Sircar-Periapalayam, Dt Coimbatore. Russet-coated Painted Ware [11.22] site.

IAR 1960-1.

Sircarsamakkulam, Dt Coimbatore. Two Neolithic [4.6.10] implements—a celt and a hammer-stone—were found in the vicinity of an urn burial site. The celt had a triangular outline and an almost oblong transverse section. See NATTAMEDU¹.

IAR 1957-8.

Sirdi, Dt Chittaurgarh. Site in the Berach valley with white-painted black-and-red ware [11.6.2]. See DARAULL.

IAR 1956-7; 1962-3.

Sirha, Dt Kangra. Lower Palaeolithic [4.2] site in the BEAS VALLEY.

Mohapatra, G.C., 1966, in *Bull. Deccan College Res. Inst.*, M. 221-37.

Sirkanegaon, Dt Ahmadnagar. Tools of Series II Middle Palaeolithic [4.3] and microliths (of unspecified nature) were found. The early historical pottery was characterized by black-and-red and red wares.

IAR 1960-1.

Sirrol, Dt Bijapur. Microliths (of unspecified nature).

IAR 1962-3.

Siromonipur, Dt Bankura. Microliths (of unspecified nature) and flakes.

IAR 1962-3.

Sironcha, Dt Chanda. Tools of Series II (Middle Palaeolithic [4.3]) and a few crude Neolithic [4.6] implements were found.

IAR 1958-9.

Sirpat Baram, Dt Varanasi. NBPW [11.16] and black-and-red ware [11.6.3] site.

IAR 1962-3.

Sirpur (21°20'; 82°11'), Dt Raipur. Well-known for its 8th-century Brāhmanical temple, known as the Lakṣmaṇa Sirpur (Śrīpura) was the capital of the Pāṇḍuvamśi rulers of S. Kosala in the 6th-8th centuries. The existence of a large Buddhist establishment within 700 m of the temple was known long ago through the discovery of the head of a large Buddha image (*ASI-AR*, 7, p. 168) and the subsequent discovery of a hoard of Buddhist bronzes. The Buddhist remains were excavated by M.G. Dikshit on behalf of the Univ. of Saugar in 1954-56 (*IAR* 1954-5, p. 24; 1955-6, p. 26), and thus a large monastic establishment was brought to light.

The main monastery, rectangular on plan, had an elaborately carved gateway on the n. leading to the projecting porch, which led to the monastery proper with its usual plan of cells flanked by verandas with a pillared courtyard at the centre and a shrine. An inscription in 8th-century characters found in the n. veranda says in that the structure was erected by a monk called Ānandaprabhu in the reign of Balārjuna. The central shrine at the back of the monastery had a colossal image of Buddha in *bhūmi-sparsa-mudrā* flanked by Padmapāṇi. After about two centuries the monastery was appropriated by the Śaivas, who effected large-scale repairs and changes. Adjoining the monastery and sharing its common e. wall was another structure probably an ancillary building with the kitchen, rejectory, bath, store-room and hall (Mitra, 1971, pp. 102-3) with a stone-paved court but irregularly grouped cells.

The small finds were prolific and included tools of agriculture, smithy, pottery-making, goldwork, etc. One room produced a complete set of goldsmith's tools, including pincers, tongs, a hammer, tripod and a touchstone with marks of gold-testing. A fine bronze gold-plated image of Buddha had its eyes set in silver and lips plated with copper. Some other bronzes had sand still adhering to the metal, indicating the mode of their manufacture.

Two other monasteries in the area had the usual monastic plan, with the central hall with statues of Buddha and subsidiary Mahāyāna deities, inscribed with the Buddhist creed in characters of the 7th-8th centuries. The associated antiquities included locks and keys [6.12], lamps [6.11], votive tablets and a Chinese coin with a square hole at the centre, attributed to Kai Yuan (713-41). All the structures were turned into Śaivite usage in later days.

The habitation area, no doubt representing the site of the town, revealed three Pds of occupation. Pd I can be ascribed to the last quarter of the 5th century on the basis of a coin of Prasannamātra of the Śarabhapura dynasty. Pd II, 7th century, had a brisk structural activity, with several brick and stone structures. Pd III can be dated to

the 11th century and later on the basin of 106 copper coins of Ratnadeva of the Ratnapura branch of the Kalacuri dynasty. As many as 43 residential rooms of this Pd were exposed. To this Pd also belonged a large number of polychrome glass bangles.

Mitra, D., 1971, *Buddhist Monuments*, Calcutta.—A. GHOSH
Sirsa¹ (Itaura), Dt Bhind. NBPW [11.16] and black-and-red ware.

IAR 1958-9.

Sirsa² (29°32'; 76°3'), Dt Hissar. Early historical [4.18.1] site with Rang Mahal Ware [11.24].

IAR 1966-7; 1967-8. Silak Ram, 1972, unpublished thesis, Kurukshetra Univ.

Sirsa³, Dt Mayurbhanj. Lower Palaeolithic [4.2] site.

Mohapatra, G.C., 1962, *Stone Age Cultures of Orissa*, Poona, p. 38.

Sirsaganj, Dt Mainpuri. PGW [11.14] site.

IAR 1961-2.

Sirsanambedu, Dt Chittoor. Early Stone Age (Lower Palaeolithic [4.2]) site.

Sirsa valley, the Sirsa, a tributary of the Sutlej, rising in the Kasauli hills and after following a s.-e. to n.-w. direction meeting the Sutlej about 16 km w. of Nalagarh (31°0'; 76°40'). In this journey the Sirsa cuts through a valley bounded on one side by the main Himalayan mountain and on the other side by the Siwalik range. Sections of the Upper Siwaliks are well-exposed on the left bank of this river, comprising the Tatrot, Pinjor and Boulder Conglomerate stages.

Like several other streams which flow in the sub-Himalayan region this river is flanked by high-level terraces on both banks. A sequence of three terraces on the Sirsa and its tributary nullahs has been noticed on the s. and s.-e. of Nalagarh town, at approximate heights of 23 m., 13.5 m and 3.5 m respectively above the present stream level. These terraces are cut-and-fill type developed on the deposits consisting gravels and silts and resting on the Upper Siwalik Boulder Conglomerate. Parts of the terrace deposits are the remnants of ancient colluvial fans and cores. Only the higher two terraces have so far proved to be implementiferous. The relation of the terraces with the Pleistocene glacial sequence of the Himalayas has not yet been understood. On stratigraphic consideration the Nalagarh terraces appear to be post-Siwalik in age, i.e., not older than the Late Mid-Pleistocene period [9.8.2].

The main Palaeolithic [4.2] sites are found to be generally concentrated on the s. and s.-e. of Nalagarh along the Sirsa valley on the terraces at DADHI on the Khokra-choa, BELI DIWAR, HARIPUR, MARHANWALLA etc. Such sites are also found w. of Nalagarh across the Kanahan river at DHER MAJRA en route to ROPAR, an important Harappa site. E. of Nalagarh on the Chikni the sites are situated at DHANG and PALASI.

The implement types generally fall in two groups, pebble tools and flake tools. They are made of varieties

of light-coloured, fine-grained quartzites. There is not much typological variation between the tools from the higher terraces. The pebble tools are made on rounded water-worn pebbles and the more frequent types are choppers and scrapers. The choppers show two-directional primary flaking producing a zigzag cutting edge. A little step-flaking is also seen on the edges. The scrapers are characterized by unifacial flaking along the side or end of the pebble. Typologically these pebble tools generally resemble those of the Early Sohan of Pakistan [4.2]. Besides these pebble tools there are a few simple pebble cores of flattish, round or discoidal forms. The flakes show Clactonian technique [16.15.1], the true Levalloisean flake type being absent. Among the tool types on flakes crude scrapers, points, knives and borers are common. Some of these recall the tools of Middle Palaeolithic industries [4.3].

The prehistoric sites of the valley were first discovered by O. Prüfer in 1951 while he was exploring the region for Harappa sites. A detailed study of Nalagarh area was later carried out by D. Sen of the Calcutta Univ. and G.G. Mohapatra and Baldev Singh of the Panjab Univ.

Sen, D., 1955, in *Man in India*, 35, pp. 177-84.—R.V. JOSHI

Sirsi¹, Dt Bidar. Megalithic [4.17.8] site.

Karnataka Bharati, 11, 3.

Sirsi², Dt N. Kanara. Megalithic site with a rock-cut chamber.

Information from A. Sundara.

Sirsod Bichapari, Dt Hissar. Early historical [4.18.1] site.

Silak Ram, 1972, unpublished thesis, Kurukshetra Univ.

Sirumugai, Dt Coimbatore. Megalithic [4.17.9] site.

ASI—AR, S. Circle, 1913-4, pp. 43-4.

Sirur, Dt Amravati. Series II (Middle Palaeolithic [4.3]) tools and microliths (of unspecified nature).

IAR 1960-1.

Siruvedi, Dt Chingleput. Lower Palaeolithic [4.2] and Megalithic [4.17.9] site.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras, p. 174. AI, 22, 1966, p. 27.

Sirwar, Dt Raichur. Early historical [14.18.11] site; scoriaceous ash lump and Neolithic artefacts were also found.

Allchin, F.R., 1963, *Neolithic Cattle-keepers of s. India*, Cambridge, p. 66.

Sisai, Dt Hissar. Pre-Harappa [4.8] material comparable with the Degenerate SISWAL was found at Sisai-1 and -2, whereas pre-Harappa [4.8] and Harappa [4.9] material was found at Sisai-3.

IAR 1966-7. *Haryana Studies in History & Culture*, p. 138. Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 124.

Sisana, Dt Rohtak. Late Harappa [4.10] site.

Jour. Haryana Studies, 3, 1, p. 6.

Sisupalgarh (20°13'; 85°51') sprawling on the s.-e. periphery of Bhubaneswar and presenting an imposing

sight of an early historical fort unfolding to a remarkable degree the story of an integral culture that had its own stages of growth, decline and decay. On circumstantial evidence the fort has been identified with two well-known cities of ancient Kalinga: (1) Tosali mentioned in the edicts of Aśoka at Dhauḷi, 5 km. s.-e. of the site and (2) Kalinganagara of Khāravela's inscription in Cave 14 (Hāthīgumpha) of the UDAYAGIRI hill, about 10 km w.-n.-w. of the site. The fortified town, protected on all sides by a running moat, is roughly square on plan with each of its sides running over 1 km, interrupted by two large gateways and two narrow openings. Towards the centre of the town stands a group of 16 monolithic pillars of laterite, some bearing medallions like those found at Bharhut, SANCHI and UDAYAGIRI-KHANDAGIRI caves, having an unusually large ground plan of 8.28 m by 7.36 m which is identified as the remains of a pillared hall that once stood here.

Excavation conducted here by the ASI under B.B. Lal in 1948 (*AI*, 5, 1949, pp. 62-105) has revealed that the site was in occupation from the beginning of the 3rd century B.C. to the middle of the 4th century A.D. The Early Pd, c. 300 to 220 B.C., represents the settlement in its formative stage when the people used plain pottery from dull-grey to terracotta-red in colour. It is of interest to find a few pottery types, particularly fragments of pear-shaped vases in red ware which bear affinities with the corresponding types recovered from the Mauryan levels of various sites of n. India. No structural remains of the Pd have come to light.

The next Pd, composed of two phases, is marked by a transition from the era of prosperity to a stage of decadence. The culture of the site reached its height in the early phase, c. 200 B.C. to A.D. 100 when a sophisticated bright-red polished ware appears in a variety of forms with applied and incised decorative designs. At the bottom occur a few sherds of the black-and-red ware [11.6], while the upper level has yielded fragments of the Rouletted Ware [11.21] providing a chronological datum of the site. The most characteristic type of ware is a 'knobbed' vessel, a kind of bowl-cum-lid, in grey or greyish-black colour with or without concentric circles on the inner base. In the late phase of the Pd, A.D. 100-200, the deterioration of the culture is obvious. The bright-red ware degenerates into a coarse pale red ware with crude decorations. The finds of the Pd include glass bangles, clay bullae [6.4] imitating Roman coins, a silver punch-marked coin [3.1], a copper coin of Huviska and a large number of terracotta ear ornaments.

But what marks the Pd most is the construction of defences in four successive phases. Originally the defences were constructed towards the beginning of the Pd and consisted of massive mud ramparts, 10-12 m wide at the base and more than 8 m high with magnificent gate-

ways, guard-rooms, ancillary passages and corner towers. In the second phase the clay rampart being susceptible to erosion was reinforced by adding a thick layer of gravel on its top. The third phase is marked by the erection of two brick walls, 8 m apart, on the top of the gravel layer with fillings of mud and debris in between. Finally, a collapsed revetment wall was renovated with a battered exterior.

The excavated w. gateway built of large slabs of dressed laterite is remarkably elaborate. The imposing complex has a passage, 8 m wide, between the two flank-walls and two gates, outer and inner, giving access to the interior of the town. Immediately behind the outer entrance a guard-room was built in the s. flank while the n. flank near the inner gate was pierced by a narrow pathway for pedestrian traffic, presumably as a bypass when the main passage was closed. The top of the flanks could be ascended by flights of stone steps set on either side of the passage in the interior. Excavation has further revealed the collapse of and subsequent repairs to the gateway and attached ramparts. This was a significant event which bears a striking correspondence to the accounts in the Hāthīgumpha inscription on the UDAYAGIRI hill wherein Khāravela is stated to have rebuilt the gates and the walls of the capital hit by a devastating cyclone.

The city was systematically planned with well-built houses of laterite or brick laid out in orderly streets on a grid pattern. Scars of ruts by cart wheels uncovered at various levels of the streets reveal a record of the life of the people in the city.

In the last Pd, c. A.D. 200 to 350, the cultural degeneration of the site was complete. A coarse ochre-washed red ware was in use of place in bright-red ware. The finds include an imitation gold coin of the Kushan king Vāsudeva, Puri-Kushan coins and a number of later Āndhra coins, besides a large number of terracotta ear ornaments. The houses of the Pd were built in separate blocks, each having two or three rooms with a spacious veranda in front.

The total impression is that this well-organized fortified centre was in a high stage of culture displaying an advanced technique of defence and layout of an urban character which the inhabitants attained by their own merits and efforts. This then must have been a very important establishment in the early historical times. So extensive was the fort that numerous signs of habitation are traceable even outside the fortification and the reported finds of microliths (information from A. Ghosh) and a Neolithic celt (*IAR* 1969-70, p. 60) of the rounded butt-end variety from a mound adjacent to the bridge over the Gangua river to the immediate w. together with the two shouldered celts (*AI*, 16, 1960, p. 59) recovered from inside the fort unquestionably point to an early

origin of the site.

S. K. MUKHERJEE

Siswal (29° 10'; 75° 3'), Dt Hissar, 26 km w. of Hissar, discovered by the writer in 1968 in the course of his explorations along the Chitang, the old course of the Drsadvati. The site is approached by a metalled road from Adampur Mandi railway station 8 km away. The Hissar Major Canal, locally known as the Chitang or Chautang, flows by the n. flank of the site. The mound, now under cultivation and converted into terraces, covers an approximate area of 300 × 200 m with a longer n.-s. axis and rises to a gentle height of 2.5 m from the general ground level. It appears from the general contours that it is located on a slightly raised ground distinguished from a depression in the fields to the s. A few cuttings of wells and borings for tube-wells within this depression have revealed thick deposits of river sand. The depression runs in a meandering way along the Hissar Major Distributary and as we go farther, w. its course is more sharply demarcated by a chain of sand dunes. The sites of SOTHI and NOHAR are located down this course.

A small area measuring 2 × 2 m was excavated to a depth of 1.90 m in 1970. The natural soil of yellow silt containing lime *kankar* was reached at a depth of 1.25 m in all five strata, falling into two phases, A and B, have been revealed.

The pottery of Siswal A can be broadly classified into red, buff, grey, black-and-red and handmade dull-red wares. The red ware comprises Fabrics A to D and the buff and grey ware Fabrics E and F respectively of KALIBANGAN I. The black-and-red ware is confined to the early levels and only a single shape of bowl has been recovered. Fabric A a thin gritty ware potted on light wheel and generally burnt to a grey core. It is painted with black and white designs over a matt red or pinkish surface. The main shapes in this fabric include the *loja*-shaped vase, vase with loop handle, basin and jar. The bowl is provided with a ring base while the basin and trough have pedestal bases. The vase generally has a wide mouth and the bowl is shallower as compared to its counterpart in KALIBANGAN I. Fabric B is limited in quantity and is distinguished by a rusticated lower surface on the exterior. The upper part of the vessels is treated with slip. Fabric C is a well-potted ware treated with red slip and painted with black designs. The fabric is akin to the Harappa [11.3] and might represent the pottery of the elite. Fabric D comprises thick red ware sometimes rusticated on the exterior. The main shapes include the trough incised on the interior and sturdy storage jar. The handmade pottery comprises dull-red or buff ware.

The Siswal A pottery is invariably decorated with painted designs except in the case of Fabric F, black and

red and handmade red wares. Fabric A is most profusely painted of all the fabrics generally at the rim, neck and shoulder of the vase, jar, cup, bowl, etc. The bowl is also painted on the interior. The painting is done in black or chocolate pigment over a dull-red or pinkish matt surface. The use of white pigment in addition to black produces a bichrome effect. Although the overall pattern of painted designs reveals naturalistic features, the design elements are common in KALIBANGAN I but at Siswal the variety of designs is less. The main designs include black bands, horizontal lines, zigzag horizontal lines, oblique strokes, suspended loops, fish scales, cross-hatched diamonds, opposed triangles, ovals, arced designs, sigmas, fish, arrows, etc. Naturalistic designs and *trishula*-like motif are absent. The decorated designs commonly occur on the interior of troughs in Fabric D. These are executed with a sharp-edged tool, possibly of metal. A few Fabric A vases are decorated above the shoulder on the exterior with thin sharply cut lines. The main designs thus executed include linear and geometric patterns comprising horizontal, flowing and oblique grooves and latticed, chevron and cord designs. It seems that the incised designs on the BARA ware are related to this tradition.

The pottery of Siswal B is distinguished from the earlier one by more evolved shapes and designs in an otherwise Siswal ceramic tradition. Almost all the fabrics of Siswal A continue to be in use but the use of white pigment on Fabric A vases disappears and the vessels are now painted only with black pigment. It is better potted and more sturdy. The pottery also undergoes typological modifications. Moreover it is associated with the typical mature Harappa pottery types which are limited in number and are confined to the storage jar, S-shaped jar, vase with footed base, perforated jar, dish-on-stand, etc., all characteristic of the classical Harappa tradition.

Suraj Bhan, 1973, in Agrawal, D.P., & Ghosh, A., ed., *Radiocarbon & Indian Arch.* Bombay, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide.*—SURAJ BHAN
Sitabhinji, Dt Keonjhar. Neolithic [4.6.7] site with later painted rock inscriptions.

IAR 1958-9, AI, 16, 1960, p. 73.

Sitakhardi, Dt Mandasaur. Painted rock-shelters [13] were found in the vicinity of Hinglajgad fort near Bhanpura. Microliths comprising long blades, lunates and fluted cores of agate and chalcedony were also encountered in the shelters.

IAR 1957-8; 1958-9.

Sitakundi rivulet, Dt Monghyr. Tools of Series (Lower Palaeolithic [4.2]) were found by the side of the Sitakundi rivulet at Jamalpur hill.

IAR 1960-1.

Sitalpur, Dt Saran. NBPW [11.16] site.

IAR 1961-2.

Sitamau, Dt Mandsaur. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1963-4.

Sitampalli, Dt Kolar. Megalithic [4.17.8] stone circles.

IAR 1972-3.

Sitanagar¹, Dt Damoh. Middle Palaeolithic [4.3] site.

AI, 17, 1961, pp. 5-36.

Sitanagar², Dt Dhule. Tools of Series II (Middle Palaeolithic [4.3]) on the Sonar river.

IAR 1958-9.

Sitapur, Dt Banda. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3]) tools.

IAR 1961-2.

Sitapuram, Dt Chingleput. Megalithic [4.17.9] site. See PERAMBUR.

ASI—AR 1908-9, p. 92.

Sitarampeta, Dt Chittoor. The Swarnamukhi basin revealed a Palaeolithic industry [4.2] mostly comprising developed Acheulian handaxes.

IAR 1960-1.

Sitenjeri, Dt Chingleput. Lower and Middle Palaeolithic [4.2, 3] site on the river Korttalayar.

IAR 1963-4.

Sitimani, Dt Bijapur. Lower and Middle Palaeolithic [4.2, 3] site.

Pappu, R. S., 1974, *Pleistocene Studies in the Upper Krishna Basin*, Pune, p. 33.

Sittannavasal, Dt Pudukkottai. Port-holed cists [4.17.9]. The site is famous for its late historical painted Jaina caves.

AI, 4, 1947-8, p. 307.

Siuliburirdanga, Dt Burdwan. Black-and-red Ware [11.6.5].

IAR 1971-2.

Siura-Pahari, Dt Birbhum. Microliths (of unspecified nature) and flakes.

IAR 1961-2.

Sivagiri, Dt Tirunelveli. Burial urns [4.17.9].

ASI—AR 1936-7.

Sivakalli, Dt Mysore. Neolithic [16.6.9] remains.

IAR 1960-1.

Sivan, Dt Birbhum. Microliths [of unspecified nature].

IAR 1964-5.

Sivanmalai, Dt Coimbatore. Megalithic [4.17.9] site with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Sivapur, Dt Raichur. Chalcolithic [4.14.8] site with ash-mound [14.3]. Also a Megalithic [4.17.8] site.

Allchin, F. R., 1963, *Neolithic Cattle-keepers of India*, Cambridge, pp. 58-9.

Sivapura, Dt Mysore. Megalithic [4.17.8] cairn circles.

IAR 1962-3.

Sivapuram, Dt Krishna. Sites with dolmens [4.17.7].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Sivarakkottai, Dt Madurai. Microliths with painted black-on-red and red and black wares. Also urn burials

[4.17.9]. See TANGALACHERI.

IAR 1958-9; 1960-1.

Sivarapatna, Dt Kolar. Site with black-and-red and red wares.

IAR 1972-3.

Sivar-Venkatapur, Dt Medak. Prehistoric burials (of unspecified nature).

IAR 1962-3.

Sivavaram, Dt Kurnool. Neolithic [4.6.8] ground stone axes, microlithic fluted cores, blades, black-painted red ware, burnished grey ware and Megalithic Black-and-red Ware [11.15]. See SINGANAPALLI.

IAR 1963-4; 1967-8.

Sivni, Dt Wardha. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1959-60.

Siwan, Dt Birbhum. Microliths (of unspecified nature).

IAR 1963-4.

Siyalpurpada, Dt Dhule. Series II (Middle Palaeolithic [4.3]) tools were collected from the gravel bed of the TAPTIL.

IAR 1960-1.

Sodag, Dt Ranchi. A highly polished wedge-shaped chisel of dark-green quartzite was found.

Roy, S. C., 1916, in *Jour. Bihar & Orissa Res. Soc.*, 2, p. 66.

Sodhang, Dt Ujjain. Black-and-red, grey and late historical wares.

IAR 1970-1.

Sogival, Dt Dharwar. Megalithic [4.17.8] cist circles.

IAR 1961-2.

Sohankot, Dt Deoria. Defensive walls.

IAR 1962-3.

Sohgaura, Dt Gorakhpur. There is a ¹⁴C date of c. 1300 B.C. for the black-and-red ware. The site is the findspot of a bronze plaque with a Mauryan Prakrit inscription recording the setting up of a granary for storing grains for famines.

IAR 1961-2. Sircar, D. C., 1965, *Select Inscriptions*, 1, Calcutta, p. 82.

Sohian-Kalan, Dt Amritsar. Grey ware and Black-slipped Ware [11.13].

IAR 1962-3.

Sojat, Dt Pali. Series, I, II (Lower, Middle Palaeolithic [4.2, 3]) and III (Mesolithic [4.5]) tools. (Same as following?).

IAR 1959-60.

Sojet, Dt Pali (wrongly stated to be Marwar). Site on the river Sukri with Series II (Middle Palaeolithic [4.3]) tools. (Same as preceding?).

IAR 1958-9.

Sokadu, Dt Dharmapuri. Dolmenoid cists [4.17.9].

IAR 1965-6.

Sokkanur, Dt Coimbatore. Megalithic cairn circles [4.17.9].

IAR 1962-3.

Solamaligai, Dt Thanjavur. Cultural deposit ranging from the Megalithic [4.17.9] to the late medieval period.

IAR 1964-5.

Solath, Dt Jind. Late Harappa [4.10] and PGW [11.14] site.

Suraj Bhan, & Shaffer, J.G., 1978, in *Man & Environment*, 2.

Somanala, Dt Raichur. Chalcolithic [4.14.8] and early historical [4.18.11] site.

Karnataka Bharati, 6, 1, pp. 64-5.

Somapur, Dt Hassan. Megalithic site with stone circles [4.17.8].

Seshadri, M., 1956, *Stone-using Cultures of Pre- & Proto-historic Mysore*, London, p. 61.

Somasandra, Dt Kolar. Megalithic stone circles [4.17.8]. IAR 1972-3.

Somasila, Dt Nellore. Lower [4.2] and Middle Palaeolithic [4.3] site in the Pennar valley.

IAR 1965-6.

Sombur, Dt Anantnag. Neolithic [4.6.1] assemblage similar to that of BURZAHOM.

IAR 1962-3.

Somhalli, Dt Mysore. Megalithic cairn circles [4.17.8].

IAR 1962-3.

Somnath. See PRABHAS PATAN.

Sompur, Dt Mysore. Large cairn field [4.17.8].

Seshadri, M., 1960, *Report on the Jadigenahalli Megalithic Excavations*, Bangalore, p. 7.

Somsil, Dt Mahbubnagar. Middle Palaeolithic [4.3] site.

IAR 1967-8.

Somur, Dt Coimbatore. Megalithic site with dolmens [4.17.9].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Sonabarsa. See CHANDRAPRABHA VALLEY.

Sonahatu, Dt Ranchi. Microliths (of unspecified nature) and small dolmens.

IAR 1961-2.

Sonamarg, Dt Srinagar. A collection of tools, looking almost like handaxe [4.2] group, was noticed in the recent glacial deposits near the place.

IAR 1970-1.

Sonbarsa, Dt Gorakhpur. Black-and-red Ware [11.6.3].

IAR 1963-4.

Sonbhadra. See PACHMARHI.

Sonda-Jatpur, Dt Bulandshahr. Early historical site yielding coarse grey ware, Black-slipped Ware [11.13] and plain red ware of Sunga-Kushan assemblage.

IAR 1965-6.

Sondh, Dt Gurgaon. PGW [11.14] and early historical [4.18.1] site.

Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.

Sondha, Dt Mandla. Early, Middle (Lower, Middle Palaeolithic [4.2, 3]) and Late Stone Age (Mesolithic [4.5]) tools.

IAR 1964-5.

Sonegaon¹, Dt Chanda. Lower Palaeolithic [4.2] site.

IAR 1959-60.

Sonegaon², Dt Nagpur. Megalithic site with stone circles [4.17.6].

IAR 1970-1.

Sonegaon². See SONGAON².

Sonepat (28°59'; 79°1'), Dt Rohtak. NBPW [11.16] site. AI, 10 & 11, 1954 & 1955, p. 145.

Sonepur. See SONPUR.

Sonnappanahalli, Dt Bangalore. Megalithic site with port-holed cists [4.17.8].

Seshadri, M., 1956, *Stone-using Cultures of Pre- & Proto-historic Mysore*, London, p. 61.

Sonnappanahalli, Dt Bangalore. Port-holed cist cemetery [4.17.8].

AI, 4, 1947-8, p. 307.

Songadh, Dt Ratlam. Kayatha Ware [11.7] site.

Wakankar, V.S., 1976, in *Arch. Congress & Seminar, 1972*, Kurukshetra, p. 56.

Songaon¹, Dt Ahmadnagar. Early historical [4.18.9] site.

IAR 1959-60.

Songaon² (18°00'; 74°35'), Dt Pune, on the confluence of the Nira and Karha, with two mounds, one smaller than the other, though it is likely that both were originally one but have been cut up by cultivation. The site was excavated by S.B. Deo of the Deccan College, Pune, in 1965. The excavation of about 5 m thick cultural deposit has revealed that the site was occupied during the Neolithic and Chalcolithic periods [4.14.6]. The habitation has been divided into three Pds.

Pd I is characterized by coarse red and grey handmade pottery without painting, very similar to that from the Neolithic sites at the lower Deccan [4.6.9]. A noteworthy feature is that three pits with perfectly vertical sides and flat bottoms have been found cut into the virgin Black Cotton Soil [9.1]. All about 1 m deep, two of the smaller ones have each a diameter of about 1 m whereas the third one has a diameter of 2 m. It appears that the smaller ones were probably used as pit silos while the largest could have been used for dwelling. Thus, the evidence of pottery and pit-dwelling [14.13] is indicative of the Neolithic character of the period. There is a single ¹⁴C date of the 1465 B.C. for a charcoal sample from this Pd.

Pd II is marked by the appearance of painted pottery, of both the Malwa [11.10] and the Jorwe [11.11] fabrics. Two separate phases of this Pd have been differentiated on the evidence of pottery; in Phase A the Malwa Ware is predominant whereas in Phase B the Jorwe Ware occurs in large quantities. The coarse handmade red and grey ware of the preceding Pd continues. In the restricted excavation no house plans have been recovered but patches of well-laid floors lined with lime have been noticed. In all four twin urn burials of children have been found in the levels of this Pd. A good quantity of charred wheat has been recovered; it has given a ¹⁴C date of 1245 B.C. The terminal date for this Pd is c. 1000 B.C.

Pd III witnessed a degeneration of the Jorwe culture

of Pd II B, reflected in the coarse fabric of the black-painted red pottery. Moreover it marks the introduction of the Black-and-red Ware [11.15.3] at the site. At large rectangular house (4.50 × 6.50 m) of this Pd has been partially exposed. The Pd can be dated to the opening centuries of the 1st millennium B.C.

Deo, S.B., 1969, *Songaon Excavation 1967*, Poona.—M.K. DHAVALIKAR

Songaon³, Dt Satara. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1962-3.

Songir-pada, Dt Dhule. Microliths (of unspecified nature).

IAR 1959-60.

Sonita, Dt Chittaurgarh. Lower Palaeolithic tools [4.2] were found at Sonita about 160 km from Mandasaur. The terrace situated between the old and the present courses of the Chambal, 48 km s. of Kota, showed a 1 m thick deposit of implementiferous conglomerate overlain by a bed of gravel. In the conglomerate were found Sohan choppers and Madras (Acheulian) bifaces with Clacton flakes. The latter gravel deposit bore flakes and flake tools such as Levallois flakes and hollow and blade scrapers. The absence of choppers and Acheulian hand-axes in these deposits and the presence of flakes with prepared striking platforms and retouched edges suggest a later date for the second industry.

IAR 1955-6; 1956-7.

Sonitpur, Dt Gaya. The site yielded sherds of NBPW [11.16] with golden and silvery polish, polished fragments of sandstone and cast coins [3.1]. (Same as SONPUR?).

IAR 1955-6.

Sonkatch, Dt Dewas. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1956-7.

✓ **Sonkh** (27°29'; 77°31'), Dt Mathura, about 30 km s.-w. of Mathura town, excavated by a German team headed by H. Härtel of the Berlin Museum of Indian Art during 1966 to 1974 (IAR 1966-7, p. 41; 1968-9, p. 40; 1969-70, p. 42; 1970-1, p. 39; 1971-2, p. 47; 1972-3, p. 33). In all 40 levels divided into Pds and Sub-pds have been identified.

Pd I (800 to 400 B.C., PGW). No wall, either of mud or of mud brick, has been noticed; the only remains of brick-like pieces of mud seemingly belonging to fire-places occur on the outskirts of the settlement. But several post-holes and reed impressions in mud suggest wattle and daub construction. The ceramic industry is mainly represented by the PGW [11.14], the black-and-red ware [11.6.3] and associated red ware.

Pd II (400 to 200 B.C., pre-Mauryan and Mauryan). This Pd has two Sub-pds, A, pre-Mauryan and early Mauryan, and B, Mauryan. Mud has been profusely used as building material in Sub-pd A. The plan of a

remarkable circular structure, 3.75 m in diameter, has been exposed. A thick layer of ashes within the walls and burnt mud plaster on inner sides suggest that the roofs were of wood and reed. Among the important finds of this Pd mention may be made of grey terracotta figurines [17], punch-marked coins, uninscribed cast coins [3.1], a bronze *trishula* and a bone plaque. The popular pottery was the NBPW [11.16] and related wares.

Pd III (Śunga and post-Śunga, 2nd and 1st centuries B.C.) It has three Sub-pds, early, middle and late. In the early Śunga levels mud has been extensively used for house-building, mud brick (42 × 28 cm) being used for the first time in the later levels. Burnt brick of the same size has also been used specially for the construction of drains and walls. Towards the end of the Pd burnt brick is profusely used. The houses have two or three rooms adjusted to each other according to requirements. The houses also contain an enclosed courtyard and streets outside. In one of the structural complexes a hall (2.70 × 6.50 m) has been traced. Some of the later houses contain a water-room (bath?) with a deep ring-well [14.15]. The houses were probably finished with gable roofs covered with tiles. A notable find is the plan of an apsidal temple of the later half of the 1st century B.C. In the foundation mud brick (48 × 32 × 7 cm) has been used. In the n.-e. corner of the entrance several baked-brick (38 × 23 × 6 cm) layers rest on the foundations. Except on the entrance side the temple was surrounded by pillars. The apse once contained a hard round mud floor which formed a full circle with the wall. There is evidence of a 1.60 m wide gateway with masonry pillars. The whole complex rests on a raised platform. An older surrounding wall and a likewise older row of pillars have also been traced. The burnt brick of this wall (12 × 9.50 m) is of the same size as the mud brick of the apse. The older phase of the temple has been placed in the first half of the 1st century B.C. The most interesting finds of the Pd include a small terracotta hand with sacred symbolic coins of the local rulers of Mathura, *mithuna* figurines [17.2], punch-marked coins [3.1], etc. While some earlier shapes of pottery continue, the common pottery is now characterized by long-necked vessels.

Pd IV (1st to 3rd century, Kushan). This too has been divided into two Sub-pds. The baked-brick (42 × 26 × 6 cm) houses of this Pd have rooms around a courtyard. In a house a combined bath-room and toilet has been noticed, with two water storage jars fixed on the floor. The later houses are also of baked bricks (37 × 23 × 5 cm). On plan they are similar to the earlier ones. The larger houses contain an additional residential wing. An apsidal temple with at least seven structural phases, with three parallel boundary walls of the apse placed side by side and at least four superstructures on these walls, has been exposed. A large number of Ksatrapa and Kushan

coins have been recovered. The other important finds include a seal, stamped into a lump of clay having an inscription of Kushan Brāhmī characters, a bronze figure, hollow terracottas, plaques of Kubera and Mahiṣasuramardini, a stone panel depicting the *nāga* king and (possibly) queen on a cushion with attendants, a *śāla-bhaṅjikā* and several other minor objects.

Pd V (4th century and later, Gupta and post-Gupta). Represented by a rubble floor, these levels contain an immense deposit of burnt material upon this floor indicating several destructions. Within this deposit two structures have been exposed.

After this period the habitation area at Sonkh was deserted for nearly 1000 years and the later occupations date from the medieval periods.

German Scholars in India, New Delhi, 1976.—M.C. JOSHI

Sonnaiyankadu, Dt Thanjavur. Megalithic [4.17.9] site. *AI*, 22, 1966, p. 33.

Sonningayakkanahalli. See SENGODACHENNAHAHALI.
Sonpari, Dt Bhavnagar. Red Polished Ware [11.23] site in Kalubhar valley.

IAR 1960-1.

Sonpur¹, Sonepur, Sonitpur (24° 57'; 84° 50'), Dt Gaya, with a mound to the w. of the village locally known as Bānāsura-kā-garh, though there are many places all over India which claim to have been the capital of Bāna known as Sonitapura (Dey, 1927, p. 189). (Apart from the similarity of names there is nothing to justify the identification of Sonpur with the traditional capital of Bāna.) The mound was first explored in 1955 (*IAR* 1955-6, p. 71) by V. Mishra who picked up a few NBPW sherds [11.16], copper cast coins [3.1] and sandstone pieces which encouraged the explorer to undertake excavation on the site. The excavation was carried out by the K.P. Jayaswal Res. Inst., Patna, between 1956-7 and 1961-2 and by the Directorate of Arch. and Museums, Bihar, in 1970-1 (*IAR* 1956-7, p. 19; 1959-60; p. 14; 1960-1, p. 4; 1961-2, p. 4; 1970-1, p. 5). The excavation revealed three Pds. The first four seasons' operations had divided Pd I into two Sub-pds, A and B, but in the last season's work the excavator found no distinct demarcation between the two and considered the whole deposit of Pd I as one unit. All the three pds cover a 6-70 m thick deposit in the centre of the n. mound although at other spots the deposit varies from 3-66 to 6-10 m in thickness. The three Pds are thus represented: Pd I A, (1100-1000 B.C.), coarse black-and-red ware [11.6.4] with copper; Pd I B (1000-650 B.C.), fine black-and-red ware with copper and microliths; Pd II (650-200 B.C.), NBPW [11.16]; and Pd III (200 B.C.-A.D. 200), post-NBPW and Kushan complex.

Pd I A. The people lived in houses made of daub and reed on the natural soil, yellow sandy and compact, as indicated by the discovery of chunks of clay and plaster

having reed impressions. They used kiln-burnt pottery represented mostly by coarse black-and-red ware in association with red and black wares, usually handmade and rarely wheel-turned. The use of copper is evidenced by a copper wire. The other objects include animal bones, tanged and socketed arrowheads, styli [2.5], pins of bone and rice husk.

Pd I B. This is distinguished by wheel-turned finer black-and-red, red and black wares, the other characteristics of the whole deposit remaining the same. There are a few white-painted black sherds with designs representing strokes and zigzag lines and reddish urns with calcined bone pieces. Microliths include a very few cores, flakes and blades on chalcedony, chert, quartz, etc., and copper objects are scarce. A few circular pits on lime floors have been detected, with diameters varying from 1-84 to 2-44 m and with ashes and bones of animals and birds, they represent the plans of circular dwelling huts of the Chalcolithic [4.14.3] people. There are beads of terracotta and semiprecious stones, numerous bone objects representing arrowheads, styli and pins and a few Neolithic celts. A few post-cremation circular pit burials with diameters from 1-82 to 2-12 m and a depth of 91 cm and containing ashes with charred bones and sherds of black, red and black-and-red wares have been noticed. Interesting is the discovery of a few storage jars with charred rice [2.2] and the appearance of lumps of iron ore and slag [16.9.4] from the topmost stratum of this Pd.

Pd II. This is characterized by the appearance of the NBPW of fine to medium fabric in different shades such as golden, silvery, steel-blue, pinkish, double-coloured (one side golden and the other silvery), etc. The associated ceramics include sherds of the lustrous black-and-red, red and black wares and sherds with paintings and graffiti [20.1]. No structural remains have been found except traces of a mud wall and a rammed-earth platform containing a few complete pots, a saddle quern and four pestles [6.19] near a hearth. Thirty wells [14.15] made of terracotta rings, of 61 cm in diameter, 15 to 18 cm in height and 5 cm in thickness, have been noticed. They were usually used as refuse of soak-pits, but the discovery of one with a perforated base, probably for filtering water, suggests that it held potable water. The other objects include: iron implements represented by lances, spearheads, arrowheads, daggers, axes, nails, chisels, blades, etc., copper objects, such as antimony rods [18.1], bangles, rings, ear ornaments and a socketed arrowhead; terracotta animal and human figurines [17]; beads of semiprecious stones and glass; bangles and rings of different material; Neolithic celts; copper punch-marked and uninscribed cast coins; and a crystal human face with exotic features, possibly used as a pendant. An ashy layer at the topmost level of this Pd in

Śrāvastī

some trenches suggests the destruction of the habitation by fire.

Pd III. The site was probably deserted for a short interval after Pd II and was re-occupied after the disappearance of the NBPW and black-and-red ware. Only the red ware industry continues throughout Pd III; of medium to coarse fabric, the types include the sprinkler, spouted basin, lid-cum-bowl, inkpot [20.2], miniature vase and a few vessels with incisions and stamped decorations. Structures with a maximum of four brick courses have been exposed at the upper level of the Pd, the brick dimensions being $43 \times 31 \times 8$ cm. House plans cannot be ascertained. Ring-wells are less frequent. The antiquities include; antimony rods, bangles and rings of copper; nails, knife-blades, lances, axes, daggers, etc., of iron; bone and ivory objects; moulded and handmade terracotta animal figurines, representing humped bulls, camels, dogs, elephants, rams, bears, etc, birds, probably doves, Naigameśa, toy-carts, beads, ear ornaments, bangles, lockets, conical objects, votive tanks [12.11], dabbers [16.11], reels, discs, wheels, etc., and a few sealings; stone balls of different sizes; and Neolithic celts, pestles and querns [6.19]. Besides, punch-marked coins and cast coins of copper [3.1] are met with. The upper level of the Pd has yielded a new variety of punch-marked coins of heavier weight.

Dey, N.L., 1927, *Geographical Dictionary of Ancient & Mediaeval India*, London. Patil, D.R., 1963, *Antiquarian Remains in Bihar*, Patna. Roy, S.R., 1977, *Sonpur Excavations 1957 & 1959-62*, Patna. — S.R. ROY

Sonpur, Dt Jabalpur. Microliths (of unspecified nature). IAR 1959-60.

Sonrai, Dt Sagar. Series II (Middle Palaeolithic [4.3]) tools. IAR 1960-1.

Sonthanpara, Dt Kottayam. Urn burial [4.17.10] site. IAR 1965-6.

Sonua, Dt Singhbhum. The site about half a km from Sonua railway station on the right bank of the Sanjai river yielded Upper Palaeolithic [4.4] side scrapers, a few microliths on chert, fragment of a Neolithic mace, an axe and a Neolithic celt. IAR 1966-7.

Soodasandra, Dt Bangalore. Microliths (of unspecified nature). IAR-1959-60.

Sooron, Dt Gwalior. Early historical site [4.18.7] with black-and-red ware and NBPW [11.16]. IAR 1971-2.

Soparan, Dt Ranchi. Polished celt and chisels [4.6.5]. S.C. Roy, 1916, in *Jour. Bihar & Res. Soc.*, 2, pp. 68, 76-7.

Sorar, Dt Durg. The area comprising Sorar, Chirchuri, Kabrahat, Majagham and Karhibhander is covered with a large quantity of stones, evidently heaped up by human hand and here and there stands a huge megalithic

boulder [4.17.6].

ASI—AR 1930-4, IAR 1972-3.

Soregowdanahalli, Dt Kolar. Megalithic [4.17.8] site. (Same as following?) IAR 1969-70.

Soregowdanakote, Dt Kolar. Megalithic [4.17.8] site with cairn circles and cists. (Same as preceding?) Information from C. Krishnamurthy through A. Sundara.

Sothi, Dt Ganganagar. Small site in the DRŠADVATI VALLEY where Sothi/KALIBANGAN I ware [11.2] was first identified.

Ghosh, A., 1952, in *Bull. National Inst. of Sciences in India*, 1, pp. 37-42.

Souttoukeni, Dt Pondicherry. Megalithic [4.17.9] site.

Casal, J.M., & Casal, C., 1956, *Site urbain et sites funéraires des environs de Pondichéry-Virampatnam-Mouttra-paleon, Souttukeny*, Paris.

Soyat, Dt Shajapur. Chalcolithic [4.14.5] site with Kayatha [11.7], Ahar [11.6.2] and Malwa [11.10] Wares and punch-marked and cast copper coins [3.1]. IAR 1969-70.

Śrāvastī ($27^{\circ}31'$; $82^{\circ}2'$), Dts Gonda-Bahraich, the capital of Kosala, a city intimately associated with the lives of Buddha and Mahāvira when Prasenajit was the ruler. The ruins consist of two distinct units—Saheth, the Buddhist establishment, and Maheth to its n.e., a fortified city—separated from each other by a low-lying land probably an ancient bed of the Rapti, ancient Acirāvati, on the bank of which Śrāvastī was situated. During the life-time of Buddha his disciple Sudatta-Anāthapindika raised here a monastery, the Jetavana-vihāra, for the residence of Buddha and that became the nucleus of the Buddhist establishment of the place. Aśoka is said to have put up two capiteled pillars near the e. gate of the Jetavana-vihāra.

The site has attracted the attention of archaeologists right from the days of A. Cunningham (ASI—AR, 1, p. 330; 11, p. 78). Early this century excavations were conducted here by J. Ph. Vogel, J. Marshall and D.R. Sahni between 1907-8 and 1910-1 (ASI—AR 1907-8, p. 81; 1910-1, p. 1), as a result of which numerous stūpas, monasteries and temples, consistent with its sacredness to the Buddhists, have been exposed at Saheth within an irregular compound-wall. The earliest of them go back to Kushan times; the latest datable object is a copper-plate of the Gāhādvāla ruler Govindacandra (12th century) granting land to the Jetavana monastery, which unassailably established once for all the identity of Saheth-Maheth with Śrāvastī.

Maheth, the city-site, its rampart crescentic in shape, with a circuit of about 5 km and a height of 18 m, lies about 1 km to the s. of the Rapti. The prominent landmarks here are the Śobhanātha temple on a high mound believed to be the birth-place of the tirthankara Sambhavanātha, Pakki Kuti and Kacchi Kuti, the latter

two perhaps originally Buddhist *stūpas* but at least the second one converted into a Brāhmanical temple in Gupta times, as is evident from the discovery of a large number of *Rāmāyaṇa* panels from its debris.

Resumed excavation at Maheth in 1959 by the ASI under K. K. Sinha has yielded significant evidence on the antiquity of the city (Sinha, 1967). Two trenches, one across the n. defences and the other well within the habitation area were laid, revealing three Pds. The defences did not exist in Pd I, which is marked by the NBPW [11.16], Black-slipped Ware [11.13] and a limited quantity of the PGW [11.14], the overlap between the NBPW and PGW having been noticed at other sites as well in the Ganga valley, except HASTINĀPURA. There are also a few sherds with design in black set off against surrounding red, which, the excavator feels, recalls the process noticed in the paintings of Athenian vases of the 6th century B.C. Red ware associated with the PGW levels of Hastināpura is plentiful. Other finds of Pd I are beads of glass and semiprecious stones including 'eye-beads' [10.1] of stratified glass and agate, a cylinder bead of lapis lazuli, leech-shaped beads of agate, axe-amulet of carnelian and other beads of glass, a few terracotta animal figurines, terracotta discs, plain but some with incised sun symbol and *svastika*, decorated terracotta tiles and an extremely limited number of ivory styli [20.5] or arrowheads. Copper is employed for bangles, including one with an interlaced knot and an ear ring. Iron is limitedly represented.

Pd II which witnessed the construction of the defences seems to have followed shortly after the end of Pd I and is divisible into three phases: early, with the first construction of the defences in the form of a mud rampart afterwards topped by fortification walls of burnt brick at regular intervals. Subsequently but still within the Pd the height of the rampart wall was raised and the brick fortification was rebuilt. Houses of the Pd in the habitation area were built of reused burnt brick and ring-wells [14.15] were provided as part of civic amenities. Uninscribed copper, and punch-marked [3.1] and Ayodhyā coins, an inscribed sealing from the mid-levels, iron weapons and implements and bone arrowheads are among the finds of the Pd. The red ware with stamps consists of the miniature bowl, pear-shaped vase and jar with neck, the body of a few covered with simple reed impressions. In the grey ware in the dish with the impressed design of the wheel and concentric circles. Hand-made and moulded human figures including *mithunas*, the latter from the middle and upper levels of the Pd, and stamped animal figures are comparable with corresponding terracotta figurines of other n. Indian early historical sites. Spiral beads of glass and beads of amethyst and crystal are common.

The deposits of Pd III have been noticed only in a

limited excavated area. The fortification fell into disuse but the town must have remained inhabited as the structures found in the previous excavations would indicate. The pottery is utilitarian and plain but for some incised decorations. Terracotta human figurines, hollow and cylindrical, with foreign ethnic features compare well with those from the corresponding levels of AHIC-CHATRA.

The Pds have been dated as follows mainly on the basis of coins and other finds: Pd I, 6th century to 300 B.C.; Pd II, early phase, 275 to 200 B.C., middle phase, 200 to 125 B.C., and late phase, 125 to 50 B.C., and Pd III, early centuries of the Christian era.

Mitra, D., 1971, *Buddhist Monuments*, Calcutta, pp. 75-9. Sinha, K.K., 1967, *Excavations at Śrāvastī*, Varanasi. Venkataramayya, M., 1956, *Śrāvastī*, Delhi.—A. GHOSH

Sri Jiwan Nagar (29°30'; 74°44'), Dt Hissar. Rang Mahal [11.24] site.

IAR 1967-8.

Srikantapura, Dt Kolar. Megalithic [4.17.8] site with port-holed cists.

IAR 1971-2; 1972-3. Also information from C. Krishnamurthy through A. Sundara.

Srikolanu, Dt Nellore. Lower [4.2] and Middle Palaeolithic [4.3] site in the Pennar valley.

IAR 1965-6.

Srikrishnapuram (Gudiyam-3), Dt Chingleput. Lower and Middle Palaeolithic [4.2, 3] site on the Korttalayar.

IAR 1963-4.

Sringaur, Dt Allahabad. NBPW [11.16] besides bricks of the size of 30 × 25 × 7 cm.

IAR 1961-2.

Srinagar, Dt Saharsa. Structural remains including rampart walls and bastions and antiquities of the Pāla period.

IAR 1961-2.

Srinathgarh. See ROJDI.

Srinivasapura¹, Dt Gulbarga. Megalithic [4.17.10] site.

Jour. Geological Survey of Hyderabad, 4, 1, p. 157.

Srinivasapura², Dt Kolar. Neolithic [4.6.9], Megalithic [4.17.8] and early historical [4.18.11] material.

Foote, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, pp. 67, 69, 75-6.

Sriperumbudur, Dt Chingleput. Early Stone Age (Lower Palaeolithic [4.2]) tools including handaxes of the mid-Acheulian type, U-shaped cleavers, a discoid and a core.

IAR 1961-2; 1963-4.

Srirangabandahalli, Dt Kolar. Megalithic site with stone circles and cists.

IAR 1970-1. Also information from C. Krishnamurthy through A. Sundara.

Srirangapatna. See SERINGAPATAM.

Srisaillam Project submersible area (15°51' to 16°6'; 77°59' to 78°30'), Dts Kurnool and Mahbubnagar. With a view of salvaging antiquarian remains in 107 villages

covering an area of about 660 sq km, to be submerged under a reservoir of the Srisaillam Hydroelectric Project, an intensive exploration of the village was carried out in during 1960-1 to 1967-8 (*IAR 1960-1*, p. 42; *1962-3*, p. 2, 48; *1963-4*, p. 4; *1967-8*, pp. 2, 3, 5) and again 1977-9 by the ASI and some sites excavated by the ASI, State Dept of Arch., Andhra Pradesh, Nagarjuna Univ., Guntur, and Birla Inst. of Arch., Hyderabad. (The information given below is also based on communication from I.K. Sarma and on the writer's personal observation). Thirty villages in Dt Kurnool and 28 in Dt Mahbubnagar have yielded remains ranging from prehistoric to late medieval times, in addition to 42 Calukyan, Kakatiya and Vijayanagara temples. The sites are as follows (LP = Lower Palaeolithic [4.2]; MP = Middle Palaeolithic [4.3]; M = Mesolithic [4.5]; N = Neolithic [4.6.8]; Meg = Megalithic [4.17.7]; EH = early historical [4.18.10]; LH = late historical [4.19.8]).

Dt Kurnool: Bijinivemula (15°55'; 78°15'), LH; Biravolu (15°53'; 78°23'), EH; Chebolu (15°55'; 78°25'), LH; Chelimilla (15°52'; 78°30'), LH; Edurupadu (15°55'; 78°29'), EH, LH; Ganapuram (15°52'; 78°25'), LH; Juturu (15°52'; 78°27'), LH; Kapileswaram (16°0'; 78°21'), LH; Kokkarancha (15°55'; 78°27'), LH; Madugula (15°58'; 78°23'), LH; Malyala (15°53'; 78°16'), LH; Moravakonda (16°1'; 78°15'), LH; Musalimadugu (15°58'; 78°26'), LH; Mutsumarri (15°58'; 78°19'), LH; Palamarri (15°59'; 78°21'), LH; Pamulapadu (15°50'; 78°30'), EH, LH; Potireddipadu (15°54'; 78°25'), EH; Pratakota (15°57'; 78°23'), LH; Puduru (15°51'; 78°9'), MP and LH; Sangameswaram (16°1'; 78°20'), LH; SATANIKOTA (15°55'; 78°14'), LP, MP, M, N, Meg, EH, LH; Senkarenipalle (15°58'; 78°24'), LH; Siddharajulingapuram (15°57'; 78°25'), LP, EH, LH; Siddheswaram (16°0'; 78°20'), EH, LH; Tetipadu (15°53'; 78°24'), LH; Tummaluru (15°54'; 78°26'), LH; Vamulapadu (16°0'; 78°21'), LP, M, EH; Vellala (16°0'; 78°20'), EH, LH; Virapuram (16°0'; 78°17'), N, Meg, EH.

Dt Mahbubnagar: Bekkam (16°2'; 78°8'), LH; Bhairavanipalle (15°54'; 78°8'), LH; Budidapadu (16°6'; 78°1'), LP, MP, N, EH; Chagaturu (15°58'; 78°14'), EH; Chellapadu (16°6'; 78°15'), Meg; Chinnamarur (15°58'; 78°9'), EH, LH; Gondimali (15°55'; 78°10'), LH; Gudem (16°2'; 78°9'), LH; Gundam (16°4'; 77°59'), N, EH, LH; Irladinne (16°4'; 77°59'), LP, LH; Jatpoli (16°3'; 78°13'), LH; Kalluru (15°57'; 78°14'), LH; Karpakala (16°4'; 77°59'), MP, EH; Kudavalli (16°4'; 77°59'), MP, M, N, Meg, EH, LH; Lingasanipalle (15°57'; 78°13'), EH; Malleswaram (16°2'; 78°18'), N, LH; Manchalakattu (16°3'; 78°15'), M, LH; Marumunagala (16°21'; 78°2'), LH; Paragtur (16°1'; 78°4'), M, EH, LH; Peddamarur (16°0'; 78°9'), LH; Seripalle (16°0'; 78°4'), M, EH, Somsil (16°3';

78°20'), MP, LH; Tippaipalli (16°5'; 78°0'), EH, LH; Uppalapadu (15°55'; 78°12'), MP, LH; Velaturu (15°57'; 78°11'), M, N, EH, LH; Vyaparla (16°3'; 78°3'), LH; Yapaldevipadu (15°57'; 78°13'), EH.

The Lower Palaeolithic tools from Budidapadu on the Krishna, SATANIKOTA on the Tungabhadra, Siddharajulingapuram and Vamulapadu consist of scrapers, choppers cleavers and handaxes. Quartzite discoidal scrapers, subtriangular flakes with prepared platform and bifacial pebble choppers are the finds along the Bhavanasi near Vamulapadu.

Budidapadu, Karpakala, Manchalakatta and Somsil on the Krishna and Kudavalli, Pudur, SATANIKOTA and Uppalapadu on the Tungabhadra have blades on flakes, concave and side scrapers, notches, points and borers of the Middle Palaeolithic assemblage.

Mesolithic tools comprise backed blades, lunates, points, a burin (from SATANIKOTA), fluted cores and waste flakes on chert, jasper and chalcedony. The sites are Kudavalli, Manchalakatta, Paragtur, SATANIKOTA, Seripalle, Siddharajulingapuram and Velaturu.

The Neolithic assemblage from Budidapadu, Gundam, Karpakala, Kudavalli, Malleswaram, SATANIKOTA and Velaturu include ground and polished stone axes, hammers, mace-heads and pounders on trap. Excavation at Virapuram has revealed in its early level a late Neolithic phase with ground axes, pottery and child burial.

The megaliths belong to the cairn circle type with or without boundary stones and the transepted cist-chamber type visible overground with or without stone lining. The Megalithic sites—Chellapadu, Kudavalli, SATANIKOTA and Uppalapadu—are generally located on elevated grounds and flattish rocky terrains. The first two are away from the river Tungabhadra, but the rest are right on its bank. Also at the first three the orthostats are seen arranged in the *svastika* pattern, with slabs projecting overground. Often in the s. orthostat is provided a port-hole with an antechamber leading to it. At Chagaturu a few transepted cists have a bench inside. Black-and-red Ware [11.15.3] and iron objects associated with Megalithic burials are found on the surface of all the sites. Virapuram has a Megalithic habitation deposit sandwiched between the Neolithic and early historical deposits.

Of the early historical sites SATANIKOTA is enclosed by a stone-slab fortification wall with a burnt-brick (56×28×8 cm) facing and with a moat cut into the bed rock. Inside a brick granary and houses have been exposed. A coin of Sāta Kumāra, the Red Polished Ware [11.23], Russet-coated Painted Ware [11.22] and Rouletted Ware [11.21] would place the habitation to the 1st century B.C. to the 3rd century A.D. Siddheswaram on the Krishna has the Red Polished Ware contemporary

with three small brick Śaiva shrines. Vamulapadu has the Black-and-red Ware, Red Polished Ware and Rouletted Ware. Kudavalli, with early brick and stone shrines, has the Red Polished Ware but no Rouletted or Russet-coated Painted Ware. Two gold Roman coins used as pendants have been found.

The late historical and medieval sites need not be dealt with in any detail as they are mostly temple sites.

—N.C. GHOSH

Srivaikuntham, Dt Tirunelveli. Megalithic [4.17.9] site. ASI—AR 1902-3.

Suakhera, Dt Seoni. Series II (Middle Palaeolithic [4.3]) tools. See ALONIA.

IAR 1959-60.

Suara, See SHIVNA VALLEY.

Subarnarekha valley, Dt Purulia. Early Stone Age (Lower Palaeolithic [4.2]) Upper Palaeolithic [4.4] tools.

IAR 1964-5; 1965-6; 1968-9.

Subhri Khwaja, Dt Saharanpur. Late Harappa [4.10] and OCW [11.5] site.

IAR 1967-8.

Suchan, Dt Hissar. Rang Mahal [11.24] site.

Silak Ram, 1972, unpublished thesis, Kurukshetra Univ.

Suga, Dt Ambala. PGW [11.14] and PGW [11.16].

IAR 1963-4.

Sugandalai, Dt Tirunelveli. Megalithic site.

ASI—AR 1902-3.

Sugh (30°00'; 70°23'). Dt Ambala, 4 km to the e. of Jagadhri on the w. bank along the flood-plain (*khādar*) of the Yamuna. The mound covers an area of over 5 km in circumference, largely covered by modern habitation and heavily eroded on the n. by a seasonal nullah of the Yamuna. The ruins were identified by Cunningham, ASI—AR, 2. pp. 226-7; 1963, p. 290) with Su-Lu-'in-na (Srugghna) of Hiuen Tsang (Beal, 1884, 1, p. 186) who saw here Buddhist *stūpas* and monasteries and Brāhmanical temples. Srugghna is perhaps identical with Tūrgghna mentioned in the *Taittiriya Āraṇyaka* (5.1) as marking the n. border of Kurukṣetra. It is also mentioned in Sanskrit literature as a city of importance.

Excavation by the Univ. of Panjab during 1963-5 established a sequence of three Pds. Pd I is divided into two Sub-pds. Sub-pd 1 A. datable to 500 to 400 B.C., is characterized by the occurrence of the PGW [11.14], NBPW [11.16], grey ware and the Black-slipped Ware [11.13]. The occurrence of a few fragments of mud brick indicates its use in the construction of houses. Copper and iron household tools were limited in number. In Sub-pd I B, c. 400 to 100 B.C., the PGW is absent but the NBPW and grey ware persist. The houses are constructed of burnt brick and rubble and are provided with pottery drain pipes suggesting flat roofs. The use of iron along with copper becomes profuse. Silver punch-marked coins [3] silver coins of Menander and Anti-

machus and inscribed or uninscribed copper cast coins [3.1] constitute the currency of the period. A lead cast coin bears the word *Kādasa* in the Mauryan characters and a *trīśūla* and a snake or wavy line on the obverse and an elephant with a rider on the reverse. A similar coin is reported from Taxila. Terracotta human and animal figurines moulded and handmade, are in the Maurya-Śunga style. The animal remains include those of the ox, horse, sheep, goat and pig. The other objects represented are styli [20.5], arrowheads, awls of bone or ivory, copper antimony rods [18.1], iron nails, pestles, mullers and rotary querns of stone [6.19] and a decorated soapstone vase. A bull-headed bottle-stopper of copper is a notable specimen of metal casting. The material equipment of the Sub-pd has close resemblance with that of Pd III at HASTINĀPURA and ROPAR and marks the efflorescence of the life of the town.

In Pd II, c. 100 B.C. to A.D. 300, appear the early historical red ware and the Red Polished Ware [11.23], grey ware being absent. The common artefacts are the arrowheads, axes, nails and rings of iron and antimony rods and pins of copper. The Kushan tradition of terracotta art is in its exuberance in this Pd. The human figurines are generally mould-made while those of animals are hand-modelled. The ornaments, stone objects and other material equipment are comparable with the other n. Indian historical sites like KAUSĀMBĪ, HASTINĀPURA, ROPAR, etc.

No remains of any regular occupation after the 7th century could be traced in the cuttings. What overlies the deposits of Pd II is a superficial medieval deposit in the top layers. The pottery of the Pd is distinguished by the red-ware knife-edge bowl, basin and *hāṇḍī*. The interesting finds include two terracotta sealings, one bearing the name Vyāghrarāja in characters of the 5th-6th century, while the other reads Sughā (the name of the city) in Nāgarī characters of the 12th-13th century. It seems the main habitation shifted to other parts of the mound after c. 300.

Agrawal, R.C., 1955, in *Ind. Hist. Quarterly*, 31, p. 300. Beal, S., 1884, *Buddhist Records of the W. World*, London. Cunningham, A., 1963, *Ancient Geography of India*, Varanasi (reprint). Handa, D., 1966, in *Vishveshvaranand Indological Jour.*, 4, pp. 75-9. Suraj Bhan, 1967, in *ibid.*, 5, pp. 84-9; 1967, in *Jour. of Haryana Studies*, 9, abs. 1-2. —SURAJ BHAN

Sugur, Dt Bellary. Ash-mound [14.3].

Paddayya, K., 1973, *Investigations into the Neolithic Culture of Shorapur Doub*, s. India, Leiden, fig. 29.

Sugurthihalli, Dt Gulbarga. Megalithic [4.17.8] site with stone circles.

Jour. Geological Survey of Hyderabad, 5, 1, p. 56.

Suguru, Dt Kurnool. Ash-mound [14.3].

Foote, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Suhavi¹, Dt Ambala. BARA pottery of SANGHOL I B

affiliation.

Bisht, R.S., in *Arch. Congress & Seminar, 1972*, Kurukshetra, 1976.
Suhavi², Dt Ludhiana. Late Harappa [4.10] site.

Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 122.

Suhrakiloi (Kakrala), Dt Rohtak. Rang Mahal [11.24] site.

Jour. Haryana Studies, 3, 1, p. 7.

Sujnipur (22°53'; 72°09'), Dt Mahesana. Post-Harappa site on the bank of the Saraswati river. Surface finds include the dish-on-stand in red ware, bowl without lustre and parallel-sided blades. The lustre on the surface of the earthenware is very poor.

AI, 18 & 19, 1962 & 1963, p. 189.

Sukali-Takali, Dt Nagpur. Megalithic [4.17.6] site with stone circles.

IAR 1970-1.

Sukhbazar, Dt Birbhum. Microliths (of unspecified nature).

IAR 1962-3.

Sukhpur, Dt Surendranagar. Early Stone Age (Lower Palaeolithic [4.2]) site on the river Khari.

IAR 1967-8.

Sukli, Dt Nagpur. Megaliths [4.17.6].

IAR 1961-2.

Suknur, Dt Chanda. Early Stone Age (Lower Palaeolithic [4.2]) site on the right bank of the Bhimkund nullah, a tributary of the Wardha.

IAR 1969-70.

Sukri, Dt Jabalpur. Microliths (of unspecified nature).

IAR 1959-60.

Sula, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) site.

IAR 1968-9.

Sulagiri, Dt Dharmapuri. Megalithic [4.17.9] burial site.

IAR 1969-70.

Sulaiman Tekri, Dt Bhandara. About 100 to 150 m from Sulaiman Tekri a section in the adjoining nullah on the right bank consisted of (i) shales, (ii) yellow gravelly clay, (iii) dark-brown lateritic hard pan, (iv) pisolithic laterite gravel, and (v) a thin layer of the brownish-yellow soil. Early Stone Age (Lower Palaeolithic [4.2]) tools were obtained from the basal yellow gravelly clay. Such tools were found in the same eroded deposits in the gullies near Nimthara area in the c.

IAR 1969-70.

Sulamalai, Dt Dharmapuri. Dolmenoid cists [4.17.9].

IAR 1965-6.

Sulebylu, Dt Shimoga. From the terraces of a granite outcrop, locally called Guddey Mardi, in the vicinity of Sulebylu, a few worn-out grey-ware sherds of the BRAHMAGIRI fabric and a fine fluted core on chalcedony were collected.

IAR 1967-8.

Suligunta, Dt Dharmapuri. Megalithic [4.17.9] site with port-holed cists.

IAR 1967-8.

Sulikovi, Dt Mysore. Megalithic [4.17.8] cist burials.

IAR 1961-2.

Sulikunte, Dt Kolar. Neolithic [4.6.9] and Megalithic [4.17.8] burial site.

IAR 1969-70.

Sulluvadi, Dt Mysore. Megalithic [4.17.8] cist burials.

IAR 1967-8.

Sulphet, Dt Gulbarga. Mound (of unspecified nature).

Jour. Geological Survey of Hyderabad, 5, 1, p. 56.

Sultanabad, Dt Karimnagar. Mesolithic [4.5] site.

Gururaja Rao, B.K., 1978, ed., *Decade of Arch. Studies in S. India*, Dharwar, p. 49.

Sultan Ghari, Delhi. Islamic monument with pre-Muslim occupation datable to the 7th century A.D. and later.

AI, 2, 1947, pp. 4-10. *IAR* 1959-60.

Sultanpur¹, Dt Ahmadnagar. Microliths, possibly of Chalcolithic association [4.14.6], and early historical [4.18.9] pottery.

IAR 1960-1.

Sultanpur², (21°45'; 70°50'), Dt Amreli. Late Harappa [4.10] site corresponding to RANGPUR II C.

AI, 18 & 19, 1962 & 1963, p. 207.

Sultanpur³, Dt Belgaum. Megalithic [4.17.8] site.

Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 15-22.

Sultanpur⁴, Dt Ganganagar. Rang Mahal [11.24] site in the SARASVATĪ VALLEY.

Unpublished.

Sultanpur⁵, Dt Gurgaon. Pre-Harappa [4.8] site.

Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 126.

Sultanpur⁶, Dt Hissar. Early Historical [4.18.1] site.

Silak Ram, 1972, unpublished thesis, Kurukshetra Univ.

Sultanpur⁷, Dt Mirzapur. Black-and-red ware [11.6.3] and NBPW [11.16].

IAR 1962-3.

Sultanpur⁸, Dt Rajkot. Harappa Ware [11.3], Prabhas Ware [11.8] Lustrous Red Ware [11.9], Red Polished Ware [11.23] and non-Megalithic black-and-red [11.16] ware.

IAR 1957-8.

Sultanpur Hitana, Dt Meerut. PGW [11.14] site.

IAR 1968-9.

Sultan's Battery, Dt Kozhikode. Megalithic [4.17.10] site with urn burials.

Man, 30, 1930, article 135.

Sulur, Dt Coimbatore. A group of Megalithic [4.17.9] cists, mostly port-holed and surrounded by stone circles.

Man, 30, 1930, article 135.

Sulwada, Dt Dhule. Chalcolithic [4.14.6] remains.

IAR 1958-9.

Sumthana, Dt Chanda. Lower Palaeolithic [4.2] site.

IAR 1960-1.

Sundarapatti, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 1, 1, pp. 515-8.

Sundela, Dt Tonk. Microliths (of unspecified nature).

IAR 1958-9.

Suneheti Mustahkam, Dt Saharanpur. Śunga-Kushan site.

IAR 1969-70.

Sunet, Dt Ludhiana. Early historical [4.18.1] site.

ASI-AR, 14, pp. 65-7; *Vishveshvaranand Indological Jour.*, 8, pp. 177-8.

Sungthan, Dt Bijapur. Chalcolithic [4.14.8] site, also with early historical [4.18.11] remains.

IAR 1959-60.

Sunnet, Dt Kangra. Lower Palaeolithic [4.2] site in the BEAS VALLEY.

Mohapatra, G.C., 1966, in *Bull Deccan College Res. Inst.*, pp. 221-37.

Supawara, Dt Jabalpur. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1958-9.

Surali, Dt Surat. Mesolithic [4.5] site in the Gabhani valley.

IAR 1968-9.

Surandapatti, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 1, 1, pp. 515-8.

Surangudi, Dt Tirunelveli. A *teri* [9.5] site. The tool collection includes blade flakes, flakes, discoids, a lunate and a blade core. Potsherds (evidently later) are also noticed. See SAWYERPURAM.

AI, 12, 1956, p. 14. *IAR 1972-3.*

Surasena, Dt Muzaffarnagar. Potsherds and glazed pottery beads.

ASI-AR 1935-6.

Surateshwar, Dt Birbhum. Black-and-red ware [11.6.5] site.

IAR 1965-6.

Suratgarh, Dt Ganganagar. PGW [11.14] Rang Mahal [11.24] pottery, a terracotta figurine and shell bangle in the SARASVATĪ VALLEY.

Unpublished.

Suratgarh Tibba, Dt Ganganagar. Rang Mahal [11.24] site in the SARASVATĪ VALLEY.

Unpublished.

Surath-rajardhi, Dt Birbhum. Microliths (of unspecified nature) and painted black-and-red [11.6.5] and red wares.

IAR 1962-3.

Surati, Dt Rohtak. Early historical [4.18.1] site.

Jour. Haryana Studies, 3, 1, p. 7.

Suratipalli, Dt Chingleput. Lower Palaeolithic [4.2] site.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Suravvakolla, Dt Belgaum. Middle (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) site.

IAR 1969-70.

Surawali, Dt Deoria. Defensive walls (of unknown age).

IAR 1962-3.

Suregaon, Dt Ahmadnagar. Tools of Series II (Middle Palaeolithic [4.3]) and occasionally of Series I (Lower Palaeolithic [4.2]).

IAR 1959-60.

Surgiguda¹, Dt Bolangir. Microliths (of Mesolithic [4.5] affiliation?)

IAR 1963-4.

Surgiguda², Dt Kalahandi. Microliths (of Mesolithic [4.5] affiliation?)

IAR 1963-4.

Suriawadar, Dt Jamnagar. Red Polished Ware [11.23].

IAR 1957-8.

Surkod, Dt Dharwar. Neolithic [4.6.9] site in the MALAPRABHA VALLEY.

IAR 1969-70.

Surkotada (23°37'; 70°50'), Dt Kutch, brought to light by the writer and his party in the course of the exploration of n. Kutch between 1964 and 1968 along with 17 other Harappa sites, indicating the expansion of the Harappa culture [4.9] from Sind to Gujarat by land routes. The site was excavated by them in 1970-2 (*IAR 1970-1*, p. 13; *1971-2*, p. 13), bringing to light a threefold cultural sequence and the settlement pattern of the Harappans.

In Pd I A, datable to c. 2300 B.C., the Harappans came to Surkotada and built a fortified citadel and residential annexe, made of mud brick, mud lumps and rubble, containing houses with bath-rooms and drains. They had painted pottery with the Indus alphabet [20.4.1] painted on the pots, chert blades and copper objects; a typical Harappa seal has also been found. Other interesting finds are clay *linga*-like objects [12.3] evidently of cult significance. A piece of charred rope adds to the variety of the finds. Bones of the *Equus* from the earliest levels are the other important discovery in that they show that the animal was known to the Harappans. Along with the Harappa there was also a non-Harappa population whose pottery though limitedly found shows affinities with that of Ur, Brak and T. Jitile in w. Asia in its cream slip and reserved slip.

A new element in the population along with the already extant Harappa is seen in c. 1900 B.C. The newcomers used a coarse red pottery. During this Pd, I B, a revetment was added to the fortification of the citadel. Besides house walls the important finds are a heavy copper celt and a chisel and the usual Harappa beads, chert blades, etc.

Finally, in Pd I C, with the Harappa still living here, another people using the black-and-red ware [11.6.1] and a very coarse pottery came to the site. A fortified citadel with an impressive centrally placed gateway complex in the s. was built and the residential annexe was fortified with a rampart wall having bastions and a gateway in the s. Well-arranged houses with lanes and bylanes have been exposed both in the citadel and the residential complexes. The houses on an average have five rooms. A house with five rooms facing a rectangular room has been found in the residential area. Some im-

portant finds are a typical Harappa terracotta seal, a heavy copper chisel, a hoard of copper beads and bangles and terracotta toys, tanks and beads, besides animal skeletal remains of the horse, camel, elephant and sheep. The Harappans buried the bones of their dead in small oval pits and put jars and dishes-on-stand probably for keeping food, etc., and covered it with a huge slab. This practice is unprecedented in the Harappa burial tradition.

The available ^{14}C dates are 2055 ± 95 B.C. for the earliest level of Pd I A and 1970 ± 95 B.C. for the latest level thereof. Another date of 1805 ± 90 B.P. of a mixed sample is to be discarded. The emergent picture after an evaluation of the relative and absolute chronology shows that the entire culture range at Surkotada is well within c. 2300 to 1750 B.C., with a likelihood of a later end of the bracket. The early date for the beginning can be postulated by the presence of early Indus elements in Pd I A and the proximity of Kutch to the Sind sites, only about 400 km away. This could be possible due to an early migration by land. The Harappa influences at AHAR² and the availability of the black-and-red ware at Surkotada do suggest a contact with Rajasthan at a late stage of the Harappa culture, which is obvious in the changing broad matrix of culture in c. 1800 to-1700 B.C. in w. India.

The excavation has revealed that the Harappa lived here along with an antecedent culture in Pd I A with all their typical mode of habitation and cultural assemblage and continued even after the mature phase was over. Their contribution is not meagre in the cultural transformation. No white-painted black-and-red ware akin to the AHAR² fabric is found in Pd I A and this assumes added significance as such ware is available in the Harappa levels of LOTHAL and other sites in Saurashtra. The massive rubble rampart of the citadel with an elaborate gateway complex and with guard-rooms on either side in the citadel in Pd I C is without parallel at such an early date.

Joshi, J.P., 1972, in *Arch. Congress & Seminar*, Nagpur, pp. 21-35; 1973, in Agrawal, D.P., & Ghosh, A., ed., *Radiocarbon & Indian Arch.*, Bombay, pp. 173-81; 1974, in *Purātattva*, 7, pp. 34-9.—J.P. JOSHI

Surnahalli, Dt Kolar. Megalithic [4.17.8] stone circles and cists.

IAR 1970-1. Also information from C. Krishnamurthy through A. Sundara.

Surota, Dt Bharatpur. Grey ware and terracottas.

IAR 1971-2.

Surpan, Dt Dhule. Chalcolithic [4.14.6] site with microliths and black-painted red and burnished grey wares.

IAR 1962-3.

Surubganj, Dt Bhilwara. Site on the river Banas with Series I (Lower Palaeolithic [4.2]) tools.

IAR 1958-9.

Susner, Dt Shajapur. Chalcolithic [4.14.5] site yielding Kayatha [11.7], Ahar² [11.6.2] and Malwa [11.10] Wares and punch-marked and cast copper [3.1] coins.

IAR 1969-70.

Susunia ($23^{\circ}13'$; $86^{\circ}58'$), Dt Bankura, a hill situated almost at the junction of two geological formations, a sandstone one and crystalline gneissic one. It is claimed that in this region has been found the largest factory site of the Upper Acheulian industry [4.2] *in situ* in a gravel bed.

While it is true that the collection represents one of the finest ever found it has totally lost its scientific value for nobody, not even the leader of the exploring party could locate the actual spot or spots where the tools had been found. Neither is there any gravel bed that could have sheltered these tools. Today there is not a single small tool fragment lying near by. If Susunia was really the site of the finds a total despoilation of the site is represented here.

So far the collection is concerned it is one of the finest ones showing a high development of the Upper Acheulian industrial technology. The fauna claimed to be associated with it belongs to the Late Pleistocene [9.8.2] times.

(The flat hill is well-known for an early Gupta inscription of Candravarman, son of Simhavarman, lord of Puṣkaraṇa, with other inscriptions and an engraved spoked wheel at its top.)

Das Gupta, P.C., 1967, *Prāgaitihāsika Susunia* (in Bengali) Calcutta, Sircar, D.C., ed., 1965, *Select Inscriptions*, p. 351 (for inscription). K.D. BANERJEE

Sutagatti, Dt Belgaum. A few rolled Lower Palaeolithic [4.2] tools were obtained from the GHATAPRABHA river bed.

IAR 1965-6; 1972-3.

Sutah, Dt Kathua. Early Stone Age (Lower Palaeolithic [4.2]) tools comprising bifacial handaxes, unifacial choppers, scrapers, discoids and flakes were collected from Sutah on the right bank of Basantar river.

IAR 1971-2.

Suthari, Dt Meerut. PGW [11.14] site.

IAR 1967-8.

Sutkatti ($16^{\circ}03'$; $74^{\circ}31'$), Dt Belgaum. See GHATAPRABHA VALLEY.

IAR 1965-6.

Sutlej valley. Taking its rise in the Rakas Tal lake in Tibet and flowing through the mountains in a n.-w. direction for about 300 km, the Sutlej enters Himachal Pradesh where it takes a s.-w. turn and passing through the hills at a distance of 25 km to the e. of the Simla enters Punjab in Dt Hoshiarpur and debouches into the plains at the head of ROPAR in Punjab. Continuing its s.-w. course it captures the Beas and flows in the same direction till its waters combined with those of the Beas and Ravi captures the Chenab below Bahawalpur in Pakistan. In

1929 Vats discovered the Harappa site of KOTLA NIHANG KHAN in its valley (Vats, 1940). Excavation at DHER MAJRA by Prüfer in 1950 and other explorations up the valley suggested to him existence of Cemetery H culture deposits overlying the Harappa [4.9] remains (Prüfer, 1952). Between 1953 and 1956 Y.D. Sharma on behalf of the ASI conducted excavations at ROPAR, KOTLA NIHANG KHAN, BARA and SALAURA in the same valley. As a result a sequence of cultures from the Harappa to later times can be reconstructed on stratigraphic and typological grounds. The Harappa culture has been suggested by him to have flourished in stages, KOTLA NIHANG KHAN representing its mature stage and ROPAR I its later stages [4.10]. In 1972 Sharma re-excavated BARA and has suggested a pre-Harappa [4.8] affiliation of the BARA culture.

Subsequently the valley has been explored by M.N. Deshpande and K.N. Dikshit who have discovered several late Harappa and PGW [11.14] sites. The writer's exploration along the Sutlej has brought to light the important sites of FARIDKOT and DAGRU near Moga. The assemblages from the sites have produced clear evidence of the pre-Harappa culture in the valley. Simultaneously J.P. Joshi's work at NAGAR¹, has established the overlap of the late Harappa and PGW cultures in the valley.

As a result of these investigations the following sequence of cultures in the Sutlej valley is now known: Pd I (pre-Harappa): FARIDKOT; Pd II A (mature Harappa): KOTLA NIHANG KHAN I, DAGRU; Pd II B (late mature Harappa): ROPAR I; Pd II C (late Harappa): BARA,

NAGAR¹ I, DHER MAJRA; Pd III (PGW): ROPAR II, SALAURA, NAGAR¹ I; Pd IV (NBPW [11.16]) ROPAR III; Pd V (early historical): ROPAR IV; and Pd IV (late historical): ROPAR V.

The following are the important sites in the valley (PH=pre-Harappa; H=Harappa; LH=late Harappa): KOTLA NIHANG KHAN (H, LH); ROPAR (H); BARA (LH with elements of PH); SALAURA (PGW); DHER MAJRA (LH); FARIDKOT (PH, H); DAGRU (H); NAGAR¹ (LH, PGW); and KATHPALON (LH, PGW).

Prüfer, O., 1952, *Interim Report on the Excavations carried out at Dher Majra*, Calcutta. Sharma, Y.D., 1976, in *Arch. Congress & Seminar, 1972*, Kurukshetra. Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra. Vats, M.S., 1940, *Excavations at Harappa*, Delhi. —SURAJ BHAN

Sutrapada, Dt Junagadh. Red Polished Ware [11.23] site.

IAR 1954-5.

Sutrasaria, Dt Kutch. Historical site. See AJMEL.

IAR 1965-6.

Suttur, Dt Mysore. Megalithic [4.17.8] habitation site yielding Black-and-red Ware [11.15].

IAR 1965-6.

Suvarnatirtha, Dt Jamnagar. Early historical [4.18.2] site.

IAR 1966-7.

Swalia, Dt Ghazipur. Historical site (of unspecified nature).

IAR 1962-3.

Syamarajapuram, Dt Guntur. Neolithic [4.6.8] and Megalithic [4.17.7] site.

IAR 1961-2.

T

Tabbidi, Dt Gulbarga. Neolithic [4.6.9]-Chalcolithic [4.14.8] and Megalithic [4.17.8] habitation site.

IAR 1963-4.

Tabra, Dt Jamnagar. Red Polished Ware [11.23].

IAR 1957-8.

Tachanpatti, Dt Pudukkottai. Megalithic [4.17.8] site.

Manual of Pudukkottai State, 1944, 1, 1, pp. 515-8.

Tadakanhalli, Dt Bijapur. Site with megaliths [4.17.8].

IAR 1962-3.

Tadao, Dt Dharwar. Neolithic tools, probably of the Chalcolithic [4.14.8] complex.

IAR 1957-8.

Tadas, Dt Dharwar. Early historical [4.18.11] site. See HANDIGNUR.

IAR 1958-9.

Tadbidi, Dt Gulbarga. Ash-mound [14.3].

Sundara, A., 1971, in *Prof. Nilakanta Sastri Felicitation Vol.*, Madras.

Taddevadi, Dt Bijapur. Sherds of Red Polished Ware [11.23].

IAR 1957-8.

Tadpatri, Dt Anantapur. Late Stone Age (Mesolithic [4.5]) site.

IAR 1965-6.

Tadul, Dt Osmanabad. Middle (Middle Palaeolithic [4.3]) tools comprising scrapers, cores, flakes and blades.

IAR 1971-2.

Taharpur, Dt Saharanpur. OCW [11.5] and Śunga-Kushan and medieval wares.

IAR 1964-5.

Tahdhera, Dt Muzaffarnagar. Red ware of the Śunga-Kushan assemblage.

IAR 1962-3.

Tainur, Dt S. Arcot. Megalithic [4.17.8] site.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras, p. 211.

Tajpur, Dt Meerut. Red ware of Śunga-Kushan assemblage and medieval ware.

IAR 1962-3.

Tajpura, Dt Chittaurgarh. Rich site with a large number of cleavers but a very few handaxes on the Ruparel.

IAR 1954-5.

Tajpur-Piaoli, Dt Bulandshahr. PGW [11.14] site.

IAR 1963-4.

Takalghat and Khapa (20°54'; 78°56'), Dt Nagpur, twin Megalithic sites 32 km to the w. of Nagpur, situated on

either bank of a small river Krishna, excavated by the writer on behalf of the Nagpur Univ. in 1968-9 (*IAR 1967-8*, p. 33; *1968-9*, p. 17). Khapa lying opposite Takalghat has a number of Megalithic stone circles [4.17.6] whereas Takalghat has a small habitational mound rising to about 6 m from the water level. It is well known that only a few Megalithic habitational sites have been discovered. As such the find of Takalghat as a habitation site and Khapa as the stone circle site together and opposite each other is significant. From the point of view of Megalithic typology, Khapa falls in line with other Vidarbha sites as it has only one type, i.e. stone circles. JUNAPANI, MAHURJHARI and several other sites in Vidarbha have scores of stone circles but none has so far given evidence of habitation near by.

The mound at Takalghat shows that the habitation belongs all through to the Megalithic culture, though it can be divided into three phases. Phase Ia gives evidence of house floors made of rammed dark-brown clay in which circular wooden posts were sunk. In the next phase the technique of floor-making seems to have improved inasmuch as clay, fine sand and lime are used. This phase shows the evidence of walls of clay impregnated with bamboo screen. The post-holes attest to the nature of the roof which must have been of light weight. This technique of house building remains unchanged in the last phase, i.e. Phase Ic.

All the three phases of occupation show a common ceramic culture. The constituents of this occupation are the Megalithic Black-and-red Ware [11.15.2] with several having graffiti, the micaceous dull-red ware (also encountered at MAHURJHARI, JUNAPANI, KAUNDINYAPURA I and PAUNAR I) and a few pieces of a painted ware with painting in black on dull-red surface. However by far the first is the largest in number and consists of the bowl, lid, globular pot, pot with conoidal base and cover with loop hold. The micaceous red ware comprises mostly the storage jar of medium size. All the phases give etched and non-etched carnelian and agate beads as also crystal and glass beads. The other items of material equipment of the people comprise flat rectangular axes of iron with cross fasteners, ladles and daggers. The animal bones encountered in the excavation have been identified as those of the cattle, the pig and unmistakably of the horse. It may be stated that all this

equipment is also found in the stone circles at Khapa.

Khapa and its adjacent area called Gangapur have 26 stone circles. Of these none from Khapa and three from Gangapur were excavated in two seasons. In selecting megaliths for excavation, consideration in respect of their alignment either in clusters or as isolated circles or their being near the river was taken into account.

The largest stone circle at Khapa has a diameter of 26.50 m and the smallest 12 m. The alignment of the stones and the nature of the filling is found to have been similar to the stone circles at MAHURJHARI. As at the latter site some of the stones of the circles also have a series of shallow circular cup marks. All these stone circles give evidence of three ceramic industries, viz., the Megalithic Black-and-red Ware, the micaceous red ware and the coarse red ware. All these are similar to those recovered at Takalghat not only in fabric but also in typology. However painted pottery associated with habitation at Takalghat is absent in the megaliths at Khapa.

The Khapa stone circles give evidence of sometimes one and sometimes more than one person having been buried within a circle. In several cases full-length skeletons oriented n.-s. and in some a few bone pieces have been found kept either in a pottery bowl or in one case in a copper dish. The equipment buried with the dead comprises flat rectangular axes of iron with cross, fasteners, chisels and adzes of different types, swords, lances, spears and daggers, objects of toilet like nail-parers, kitchenware like frying pans, beads of various shapes made of mostly carnelian and agate, the noteworthy among the former being those etched in white, and copper dishes with lids or covers of tapering top having a finial with a motif of either four birds perching face to face or four birds with pointed ends. No gold ornaments, like those at MAHURJHARI, have been encountered.

Another remarkable feature of the Khapa megaliths is the practice of burying the horse along with the dead. In most of the circles remains of horses have been found. The horse is seen buried along with its kit and ornaments. The former comprise iron bits and the latter some sort of copper-sheet ornament to be mounted on the face of the horse as also similar other decorative pieces crescentic in shape and kept in place on the flanks of the horse with the help of small copper tubes.

The human skeletal remains are so badly crushed that they do not warrant any observation on their physical traits. However the number of teeth in different stone circles indicate that more than one person has been interred and that the persons possibly between the age group of 17 and 25.

The habitation deposits of Takalghat Phase Ia have given a ^{14}C date of 2505 ± 100 (555 B.C.) for the top horizon. It suggests a slightly earlier period for the initial

horizon. Two observations are pertinent to this date. The first is that the ^{14}C date for the Megalithic horizons in the s., as for instance HALLUR, are older than the Takalghat date, suggesting possibly the movement of the Megalithic people from the s. to Vidarbha in a later period. The second is that in view of the identity of equipment encountered in the Takalghat habitation and the Khapa stone circles the latter also can be assigned to the same period, say 6th-7th century B.C., if not earlier.

Deo, S.B., 1970, *Excavations at Takalghat & Khapa (1968-9)*, Nagpur; 1973, in *Problem of s. Indian Megaliths*, Dharwar.—S.B. DEO

Takarwada, Dt Ujjain. Site with Kayatha Ware [11.7].

Wakankar, V.S., 1976, in *Arch. Congress & Seminar, 1972*, Kurukshetra.

Takari, Dt Sangli. Tools of Middle (Middle Palaeolithic [4.3]) and Late Stone (Mesolithic [4.5]) Ages.

IAR 1962-3.

Takhawan, Dt Etah. Site with PGW [11.14] and NBPW [11.16].

IAR 1960-1.

Takia Dih, Dt Deoria. Degenerate NBPW [11.16] and red ware.

Bharati, 8, 1962-3, p. 119.

Takiaper, Dt Varanasi, on the right bank of the Karamnasa, about 10 km n.-w. of Chakia, subjected to a small excavation by the writer on behalf of the Banaras Hindu Univ. in 1972, bringing to light an extensive settlement of the early centuries of the Christian era. Besides a burnt-brick phase evidence of an earlier stone structural phase in post-NBPW levels has been discovered whereas elsewhere in the Ganga valley burnt-brick structures come into vogue all of a sudden either in the late NBPW [4.18.1] levels or more commonly in the post-NBPW ones. The excavation has revealed two Pds, the early NBPW (Pd I) and post-NBPW (Pd II). A small conflagration between them denotes a break.

Pd I is represented by the black-and-red ware [11.6.4], Black-slipped Ware both plain and painted [11.13] and a few pieces of the NBPW [11.16]. The red ware is marked by shapes usually associated with the early NBPW levels at other sites, consisting mostly of the bowl and dish. Other finds include bone points, antimony rods, [18.1], pottery discs [6.7.3] and terracotta animal figurines, besides copper and few iron objects. The surface of the site is rich in microliths but in the levels assignable to this Pd only a few have been noticed. Structural remains are absent in this Pd. A quantity of animal bones have been found.

The first structural settlement seems to have begun only in Pd II, assignable to the early centuries of the Christian era. This post-NBPW settlement is most extensive and can be divided into two structural phases. In the foundation of the buildings of the early phase the use of stone is very popular, a reason being that geologically

the region around Chakia forms part of the Vindhyan range. In the late phase the structures are only of large-sized baked brick. Although the working level of these two structural phases is the same at some places, there is an apparent inconsistency between the alignment and the sizes of the rooms and the direction of the opening of the buildings. In some cases the house walls of the later phase faithfully follow those of the earlier one. There appears to be a proper planning in the settlement of the early phase for the rooms are fairly large and spacious. Each stone house has two wings with two rooms in each wing. In the smaller wing, running w.-e., the sizes of the rooms are 2.15×2.10 m and 2.26×2.10 m, while in the longer axis running s.-n. they are 4.10×2.70 m and 1.60×2.20 m. In the smaller axis the two rooms are interconnected through an opening. The main entrance to these rooms is from the front corridor but there is a small opening also at the back. In the larger complex the rooms are not interconnected although there is an entrance in one of the larger rooms. The settlement of the late structural phase is very extensive, spread over the whole of the site, except in low-lying areas of the mound which perhaps served as a passage. In the late phase the remains of one of the rooms, measuring 4.90×2.20 m, has been exposed as also a large brick-baked floor adjoining it. A notable find from the top deposit of this phase is a seal of black stone inscribed in Brāhmī script of the 1st-2nd centuries A.D.

T.N. ROY

Takkolam, Dt N. Arcot. Early Stone Age (Lower Palaeolithic [4.2] implements on the n. bank of the Kollar. Black-and-red Ware [11.15], red polished ware, large-sized bricks, ring-wells [14.15] and urn burials [4.17.8] were also found. 16 km to the e. of the village an embankment known as Kottaikaramedu with vestiges of large-sized bricks and medieval pottery was noticed.

IAR 1964-5; 1967-8; 1968-9.

Takli, Dt Nagpur. Megaliths [4.17.6].

IAR 1961-2.

Takli Pada, Dt Dhule. Microliths associated with ochre-coloured pottery. See DHAMDAI.

IAR 1957-8; 1959-60.

Takri, Dt Bhandara. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1959-60.

Takriada, Dt Ujjain. The site 5 km to the s. of NAGDA contained the characteristic Chalcolithic [4.14.5] assemblage of painted red and black-and-cream wares and microliths.

IAR 1955-6.

Takroda. See CHAMBAL VALLEY.

Takshakeswar, Dt Mandsaur. Rock-shelter with paintings [13].

IAR 1958-9.

Talagunda, Dt Shimoga. Early historical [4.18.11] site.

Janatha Shikshana Samiti, Silver Jubilee Vol., 1976, p. 8.

Talaja, Dt Bhavnagar. Large Red Polished Ware [11.23] site on the slopes of rock-cut caves.

IAR 1964-5.

Talala, Dt Junagadh. Site with Red Polished Ware [11.23].

IAR 1955-6; 1957-8.

Talale, Dt Mysore. Black-and-red Ware [11.15] and Russet-coated Painted Ware [11.22].

IAR 1961-2.

Talanattam, Dt Dharmapuri. Megalithic [4.17.9] cairn circles.

IAR 1970-1.

Talapura, Dt Rupnagar. Grey ware without painting resembling the PGW [11.14] in fabric and texture.

IAR 1953-4. Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 122.

Talavadi-no-timbo, Dt Ahmadabad. Harappa [4.9] site.

IAR 1966-7.

Talavappatti, Dt Salem. Megalithic [4.17.9] site with several cairns.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Talcher, Dt Dhenkanal. Series I (Lower Palaeolithic [4.2]) tools.

IAR 1957-8.

Talegaon¹, Dt Nasik. Early historical site [4.18.9].

IAR 1970-1.

Talegaon², Dt Wardha. Middle Palaeolithic [4.3] and Mesolithic [4.5] site.

IAR 1960-1.

Talikot, Dt Bijapur. Chalcolithic [4.14.8] habitation site. Megalithic [4.17.8] stone circles also occur. See BAGLUR.

Talipparamba, Dt Cannanore. Megalithic [4.17.10] site with rock-cut caves.

IAR 1971-2.

Tallakal hill, Dt Bellary. Neolithic site yielding a chisel. Foote R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Tallihalli, Dt Dharwar. Neolithic tools probably of the Chalcolithic [4.14.8] complex and early historical site [4.18.11] with typical pottery. See HANDIGNUR.

IAR 1958-9.

Talhur, Dt Belgaum. Lower Palaeolithic [4.2] and Megalithic [4.17.8] site with circular barrows.

Joshi, R.V., 1955, *Pleistocene Studies in the Malaprabha Basin*, Poona & Dharwar, pp. 22-3. IAR 1965-6. Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 15-23.

Talmari, Dt Raichur. Ash-mound [14.3].

Jour. Geological Survey of Hyderabad, 3, 1, pp. 78-82.

Talmari-Kutuknuru, Dt Mahbubnagar. Ash-mound [14.3] on the Talmari-Kutuknuru track.

Allchin, F.R., 1963, *Neolithic Cattle-keepers of s. India*, Cambridge, pp. 8 & 67.

Talodhi G., Dt Chanda. Lower Palaeolithic [4.2] site.

IAR 1959-60.

Talsa. See DHALBHUM.

Talu, Dt Hissar. Late Harappa [4.10] site.

Silak Ram, 1972, unpublished thesis, Kurukshetra Univ.

Talvad-Khurd, Dt Dhule. Late Stone Age (Mesolithic [4.5]) and microlithic tools.

IAR 1960-1.

Talwara Khurd (29°30'; 74°40'), Dt Hissar. Rang Mahal [11.24] site.

IAR 1966-7; 1967-8.

Talwara Ther (20°30'; 74°37'), Dt Hissar. Rang Mahal [11.24] site.

IAR 1967-8.

Talya, Dt Chitradurga. Lower Palaeolithic [4.2] site. Disturbed cist burial [4.17.8] with Megalithic Black-and-red Ware [11.15.3] were also found.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras. Seshadri, M., 1956, *Stone-using Cultures of Pre- & Protohistoric Mysore*, London, p. 63. IAR 1959-60.

Tamajuri, Dt Midnapur. A shouldered celt of copper [4.11].

Indian Antiquary, 34, 1905, p. 232. Das Gupta, P.C., 1966, *Exploring Bengal's Past*. Calcutta. Also information from S. Asthana.

Tamar, Dt Ranchi. Stone Age site yielding blades, lunates and finely worked points.

IAR 1968-9.

Tamasvadi, Dt Nasik. Lower [4.2] and Middle [4.3] Palaeolithic site. Also a Chalcolithic [4.14.6] burial site.

IAR 1959-60; 1964-5.

Tamatmakanhalli, Dt Kolar. Megalithic [4.17.8] stone circles.

IAR 1970-1.

Tamba, Dt Bijapur. Painted black-on-red Chalcolithic [4.14.8] pottery. See BALLOLLI.

IAR 1957-8.

Tamballapalle, Dt Cuddapah. Early, Middle (Lower, Upper Palaeolithic [4.2, 3]) and Late Stone Age (Mesolithic [4.5]) tools.

IAR 1964-5.

Tambarahalli, Dt Kolar. Megalithic [4.17.7] site with pit burials yielding Black-and-red Ware and red ware.

Information from C. Krishnamurthy through A. Sundara.

Tambhere, Dt Ahmadnagar. Palaeolithic (of unspecified nature).

IAR 1959-60.

Tamer, Dt Jabalpur. Microliths consisting of blades, crescents, scrapers and cores.

IAR 1958-9.

Tamia. See PACHMARHI.

Taminhal. See MALAPRABHA VALLEY.

IAR 1956-7.

Tamkhani, Dt Garhwal. Red ware of Śunga-Kushan assemblage.

IAR 1965-6.

Tamluk (22°20'; 87°55'), Dt Midnapur, on the right bank of the Rupnarayan, identified as ancient Tāmralipta, one of the greatest sea-ports of India. The importance of Tāmralipta as a port wherefrom Indian seacraft sailed to distant lands is indicated by frequent

references to it in Pāli and Sanskrit literature under different names such as Tāmralipta, Dāmalipta, Tāmralipi, Tāmraliptikā or Velākula. The city also figures in the works of Pliny (1st century A.D.) and Ptolemy (2nd century A.D.) as Taluctae and Tamalites respectively. Besides being a prosperous commercial town it was also a centre of religion and culture. The city was visited by Fa-hien, Hiuen Tsang and I Tsing who left glowing accounts of this flourishing centre.

Fieldwork has not only highlighted its importance but has established the antiquity of the site. The excavation conducted by the ASI in 1954-5 under M.N. Deshpande suggested that the site had been under occupation from the Neolithic [4.6.6] to modern times (IAR 1954-5, p. 19). Though the ancient deposits have been greatly disturbed by haphazard diggings in modern times, yet the excavation provided a complete culture sequence of the historical times in W. Bengal.

At the lowest level occurred Neolithic celts with an ill-fired grey ware. Pd II commencing after a break was coeval with Maurya and Śunga times. Sherds of the NBPW [11.16] and associated Black-slipped Ware [11.13] appeared in the lower level while in the upper level characteristic red ware with typical terracotta figurines and cast copper coins [3.1] of the centuries preceding Christ were found. The introduction of the Rouletted Ware [11.21] and the Red Polished Ware [11.23] marked the beginning of Pd III, which is dated to the first two centuries of the Christian era. The occurrence of the sprinkler type indicates trade contacts with the Roman world. A brick-built stepped tank and ringed soak well [14.15] provide evidence of the structural activity of this Pd. Pd IV, covering Kushan and Gupta times, was identified by typical terracotta figurines. The lower part of a beautiful dancing girl with her lyrical grace and arrangement of transparent drapery is the most enchanting find of the early Gupta period. The overlying deposit though much disturbed yielded stray pieces of sculptures belonging to Pāla and Sena times, while the top levels had remains of brick structures of the 18th and 19th centuries.

The urban aspects of the city in historical periods were thus amply demonstrated by plentitude of antiquities, mainly terracotta plaques and figurines, coins and other finds like beads of semiprecious stones. But the hiatus between the Neolithic and historical periods remained unresolved and called for further investigation.

Subsequent exploration in the neighbourhood of Tamluk by the Directorate of Arch., W. Bengal, has yielded a rich crop of Chalcolithic [4.14.4] pottery including white-painted black-and-red ware [11.6.5], microliths and a number of other antiquities from the eroded banks of the Rupnarayan river up to a distance of about 16 km from the town. The finds, now preserved in

the Tamralipta Museum, include carnelian intaglios with non-Indian motifs and a unique bone harpoon, unilaterally barbed, which, in the n. Indian context, is assignable to the early part of the second millennium B.C. or earlier.

A reappraisal was made in 1975 when excavation yielded at the lowest level of Tamluk a charred deposit containing Chalcolithic assemblages such as the black-and-red ware in characteristic shapes, tiny Neolithic celts and a variety of bone implements. The Chalcolithic culture, with its Neolithic element, is succeeded by the iron-using culture without any break. The black-and-red ware of degenerated variety continues while in the upper level are found the NBPW and associated black-slipped ware. The remains of a burnt floor of rammed brick grits and a number of post-holes provide structural evidence of the Pd. The overlying occupations have all been found to have been destroyed by recurring floods, as evidenced by silt deposits with thick patches of accumulated pottery of Śunga-Kushan times. The topmost deposits have yielded remains of open hearths of salt factories of modern times. Though the finds are sketchy due to the limited scope of the dig, the excavation has produced concrete evidence of the Neolithic epoch, merging the gap between Neolithic and historical times.

—S.K. MUKHERJEE

Tamolia, Dt Singhbhum. Microlithic tools (of unspecified nature).

IAI 1959-60.

Tamsa, Dt Nanded. Middle Stone Age (Mesolithic [4.3]) site.

IAI 1970-1.

Tamsi, Dt Chandrapur. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAI 1970-1.

Tanda¹, Dt Aurangabad. Middle Palaeolithic [4.2] and Mesolithic [4.5] site.

IAI 1965-6.

Tanda², Dt Meerut. PGW [11.14] and NBPW [11.16] site on the left bank of the Yamuna.

IAI 1968-9. Sharma, R.P., 1976, in *Arch. Congress & Seminar, 1972*, Kurukshetra.

Tandari, Dt Dharmapuri. Megalithic [4.17.9] burials and stone circles.

IAI 1968-9.

Tandigudi, Dt Madurai. Megalithic [4.17.9] site.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 128.

Tandival, Dt Ambala. PGW [11.14] and NBPW [14.16] site.

IAI 1963-4.

Tandulnair, Dt Ahmadnagar. Series II (Middle Palaeolithic [4.3]) tools and microliths of the Chalcolithic [4.14.6] assemblage.

IAI 1959-60.

Tandulwadi, Dt Ahmadnagar. Site on the Mula with Series II (Middle Palaeolithic [4.3]) tool and microliths.

IAI 1958-9.

Tandwal, Dt Ambala. PGW [11.14] site.

IAI 1964-5. Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 123.

Tandrapad, Dt Kurnool. Site on the left bank of the Tungabhadra with Series I and II (Lower and Middle Palaeolithic [4.2, 3]) tools.

IAI 1959-60.

Tangadgi, Dt Bijapur. Chalcolithic [4.17.8] and also early historical site with yellow-slipped ware, Black-and-red Ware [11.15] and Russet-coated Painted Ware [11.22].

IAI 1972-3. Information from A. Sundara.

Tangadu, Dt Dharwar. Early historical [4.18.11] site.

IAI 1960-1.

Tangal, Dt Chingleput. Early historical [4.18.12] site.

Man, 1930, article 136.

Tangalacheri, Dt Madurai. Microliths including rectangular scrapers, cores with ripple-flaking and waste flakes and cores were found together with painted black-on-red and red and black wares. Urn burials [4.17.9] were also found.

IAI 1958-9.

Tankaria, (21°45'; 69°35'), Dt Jamnagar. Late Harappa [4.10] site corresponding to RANGPUR II B and II C. Also Red Polished Ware [11.23] site.

AI, 18 & 19, 1962 & 1963, p. 207. IAI 1957-8.

Tant, Dt Saharanpur. OCW [11.5] site.

IAI 1965-6.

Tanti Silwali, Dt Ranchi. Early Stone Age (Lower Palaeolithic [4.2]) tools like choppers, handaxes and scrapers were found in the valley of the Subarnarekha.

IAI 1964-5.

Tantiyana, Dt Banas-Kantha. Historical site (of unspecified nature).

IAI 1972-3.

Tanyi, Dt Gurgaon. PGW [11.14] and early historical site.

Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.

Tapavan, Dt Midnapur. Lower Palaeolithic [4.2] tools.

IAI 1968-9.

Tapi. See TAPTI.

Tapiala, Dt Amritsar. Śunga-Kushan pottery.

IAI 1964-5.

Tapikhadkula, Dt Dhule. Palaeolithic and microlithic tools (of unspecified nature) and Chalcolithic [4.14.7] remains.

IAI 1958-9.

Tapovan, Dt Nasik. Lower Palaeolithic [4.2] site.

IAI 1959-60.

Tappal, Dt Aligarh. PGW [11.14] site.

IAI 1962-3.

Tapti, Tapi valley. With its source on a plateau in the Satpura hills at 21°49' and 70°15' near Multai, the Tapti

flows mostly over the volcanic (Deccan Trap) rocks through Madhya Pradesh, Maharashtra and Gujarat and traverses a distance of nearly 725 km. Its lower course of about 50 km in Dt Surat is tidal.

The c. Tapti valley has preserved lacustral and fluvial deposits the maximum thickness of which is around 300 m in the piedmont zone of the Satpuras. At certain places bed-rock basalt is present 90 m below mean sea level. It appears that during the early Tertiary times there existed a semimarine environment which was gradually replaced by low-energy fluvio-lacustral conditions in the later Tertiary. High-energy fluvial conditions of the Pleistocene [9.8.2] are represented by alternations of gravels, sands and silts in the upper 100 m portion of the alluvium. The exposed (about 30 m) alluvium consists of calcreted, brownish silts, sands and cobbly pebble gravels. Two cut-and-fill terraces are commonly seen in the entire valley. The older fill forms a conspicuous surface at elevations ranging in height from 15 to 25 m above the modern bed level. The younger fill is inset into the older fill. A few fossil bones of *Bos*, sp. along with the Middle Palaeolithic [4.3] tools found in the calcreted gravels suggest a late Pleistocene age for the major portion of the exposed older alluvium of the river.

The presence of hot springs and regional lineaments in the source regions of the Aner, a n. tributary of the Tapti, and deeply entrenched rejuvenated course of the modern Tapti indicate tectonic instability in the region.

Little archaeological exploration has been done on the Tapti proper. The central Tapti valley in Dt Dhule however has been found to be rich in Stone Age sites. This tract is marked by thick alluvium of nearly 60 m consisting of cross-bedded sandy gravel and silt. The Tapti and its tributaries have entrenched their valleys through these sediments which are exposed on steep cliffs. At places the sediments show three phases of deposition each consisting of gravel overlain by a silt or clay bed.

No Lower Palaeolithic [4.2] site has been so far found on the Tapti river proper. But the valleys of its tributaries like the Kan-Panjra and the Gang-nala at the confluence of the Purna with the Tapti near Edlabad in Dt Jalgaon have proved to be rich in Stone Age sites. At BHADNE-YESAR (20°50'; 74°19') excavation has uncovered a sequence of Stone Age cultures. Here the Lower Palaeolithic industries consisting of handaxes, cleavers and other associated tools are made on basalt and dolerite. The Middle Palaeolithic [4.3] and Mesolithic [4.5] artefacts are made on chert, jasper, chalcedony and the like material. A few of the Mesolithic sites are found on the Tapti, some of them factory sites. PRAKASH and SAVALDA are two important Chalcolithic sites located in this region. Several surface scatters of

Chalcolithic [4.14.6] and Megalithic [11.15] pottery in this area show extensive habitation during this period.

Some important sites in Dt Dhule are: BHADNE (20°50'; 74°19'); BHADVAD-KHURD (21°20'; 74°25'); UMAJ (21°21'; 74°65'); PRAKASH (21°30'; 74°21'); PIMPLAS (21°30'; 74°10'); and OJHARADA (21°15'; 74°10').

Adyalkar, P.G., 1975, *Palaeogeography, Framework of Sedimentation & Groundwater Potentiality of the Upland Alluvial Valleys of India*, Bombay. Sali, S.A., 1970, in *Jour. Asiatic Soc. Bombay*, 39-40, pp. 157-67.—R.V. JOSHI

Tarabad, Dt Ahmadnagar. Microliths possibly of Chalcolithic [4.14.7] association.

IAR 1960-1.

Tarabanahalli, Dt Bangalore. Russet-coated Painted Ware [11.22].

IAR 1960-1.

Taradaha, Dt Allahabad. Site with Neolithic [4.6.3] celts.

IAR 1969-70.

Taradale, Dt Mysore. Megalithic [4.17.8] habitation site yielding Black-and-red Ware [11.15].

IAR 1965-6.

Taragarh-I and -II, Dt Amritsar. Grey ware, black-and-red ware [11.6] and Black-slipped Ware [11.13].

IAR 1962-3; 1963-4.

Taraghada, Dt Rajkot. Harappa site near Rayadi. See DUMIANA.

IAR 1958-9.

Taraghra, Dt Bhavnagar. Early historical site [4.18.2] with Red Polished Ware [11.23].

IAR 1955-6.

Tarak-Daita-no-Tekro, Dt Kaira. Red Polished Ware [11.23] site.

IAR 1964-5.

Tarakulawa, Dt Deoria. Tarakulawa-I yielded red and black wares and sculptures, while Tarakulawa-II had black and red wares.

Bharati, 8, 1962-3, p. 119.

Tarana, Dt Jamnagar. Site in the Aji valley with Harappa Ware [11.18] and coarse corrugated ware.

IAR 1960-1.

Taraon¹, Dt Ghazipur. Site with Black-slipped Ware [11.13] similar to that from RAIGHAT⁴.

IAR 1962-3.

Taraon², Dt Jaunpur. Mound yielding sherds of the Black-slipped Ware [11.13] and fine grey and medieval glazed wares.

IAR 1966-7.

Tarapheni valley, Dt Midnapur. Microliths comprising blades, scrapers and points.

IAR 1963-4.

Tarawat, Dt Udaipur. Microliths, black-and-red ware [11.6.2] and associated pottery.

IAR 1956-7.

Tardehi, Dt Damoh. Lower and Middle Palaeolithic

Tekkalakotta

[4.2.3] site on Bearma river.

IAI 1958-9. AI, 17, 1961, pp. 5-36.

Targaon, Dt Satara. Middle (Middle Palaeolithic [4.3]), and Late Stone Age (Mesolithic [4.5]) tools.

IAI 1968-9.

Tarkadu-Periyatanda, Dt Salem. Extensive Neolithic [4.6.10] site on the Semmal Tank yielding a celt and bowl of burnished grey ware painted with an ochrous band.

IAI 1972-3.

Tarkhanewala-Dera, Dt Ganganagar. Harappa site [4.9] in the SARASVATI VALLEY.

Ghosh, A., 1952, in *Bull. National Inst. Sciences in India*, 1, p. 41.

Tarlaguda, Dt Bastar. Early and Middle Stone (Lower and Middle Palaeolithic [4.2, 3] Age site.

Arch. Congress & Seminar, 1972, Kurukshetra, 1976.

Tarlapadu, Dt Prakasam. Megalithic [4.17.9] site.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras, p. 138.

Tarmanhalli, Dt Bangalore. Russet-coated Painted ware [11.22]

AI, 4, 1947-8, p. 310.

Tarnatmand, Dt Nilgiri. Megalithic [4.17.9] site.

Footo, R.B., *Indian Prehistoric & Protohistoric Antiquities*, Madras, p. 16.

Tarnia, Dt Chhindwara. Rock-shelters [13].

Madhya Pradesh Ki Ruparekha, p. 40.

Tarpada Old, Dt Bhavnagar. Red Polished Ware [11.23] site in the Kalubhar valley.

IAI 1960-1.

Tarsang, Dt Panch Mahals. Site with Late Stone Age Mesolithic [4.5]) tools and microliths (of unspecified nature). Also early historical [4.18.2] settlement yielding Red Polished Ware [11.23], black-and-red ware, brick structures, beads, bangles and terracotta objects.

IAI 1971-2. Arch. Congress & Seminar, 1972, Kurukshetra, 1976.

Tarur, Tharur, Dt Palghat. Megalithic [4.17.10] site.

IAI 1969-70.

Tarwat, Dt Udaipur. White-painted black-and-red ware (of AHAR² affiliation [11.6.2] in the Berach valley.

IAI 1962-3.

Tatamakanahalli, Dt Kolar. Megalithic [4.17.8] site with cists and cairn circles.

Information from C. Krishnamurthy through A. Sundara.

Tatana, Dt Bhavnagar. Harappa [4.9] and early historical [4.18.2] site.

IAI 1971-2.

Tatarlapalle, Dt Krishna. Site with dolmens [4.17.7].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Tatarpur, Dt Birbhum. Microliths (of unspecified nature).

IAI 1962-3.

Tatarpur-Kalan, Dt Saharanpur. Harappa [4.9] site.

IAI 1964-5.

Taticherla, Dt Kurnool. Black-and-red (Megalithic?)

[11.15.3]) Ware.

IAI 1965-6.

Tattanur, Dt Chingleput. Port-holed cists [4.17.9].

AI, 4, 1947-8, p. 306.

Tauli, Dt Saharanpur. OCW [11.15] site.

IAI 1965-6.

Tavalam¹, Dt Chittoor. Megalithic [4.17.7] stone circles and dolmens.

IAI 1963-4.

Tavalam², Dt Cuddapah. Megalithic [4.17.7] site with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Tavaragera, Dt Raichur. Chalcolithic [4.14.8] and Megalithic [4.17.8] burial site. (Same as following?)

IAI 1965-6.

Tawargeri, Dt Raichur. Chalcolithic [4.14.8], Megalithic [4.17.8] and early historical [4.18.11] site. Also rock bruising [13]. (Same as preceding?)

Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 66-7.

Tayinippatti, Dt Pudukkottai. Port-holed cists [4.17.9].

AI, 4, 1947-8, p. 307.

Teehun, Dt Lohit. Stone Age site on the high terraces between 914-4 and 1219-50 m yielding choppers, a protohandaxe, cleavers, scrapers, flakes and cores. A few Neolithic [4.6.6] implements including a shouldered celt were also found.

IAI 1969-70. Arch. Congress & Seminar, Nagpur, 1972.

Tegghal, Dt Belgaum. Lower Palaeolithic [4.2] site.

Joshi, R.V., 1955, *Pleistocene Studies in the Malaprabha Valley*, Poona & Dharwar, p. 23.

Tejpur, Dt Bharuch. Mesolithic [4.5] site.

IAI 1971-2.

Tejpur-ka-Kot, Dt Ghazipur. Black-and-red ware [11.6.2].

IAI 1963-4.

Tekadipaiku, Dt Chanda. Lower Palaeolithic [4.2] site.

IAI 1959-60.

Tekal, Dt Kolar. Neolithic [4.6.9]-cum-Megalithic [4.17.8] settlement yielding a polished stone axe and a few sherds of the pale grey ware. Several cairn circles were also noticed.

IAI 1967-8.

Tekkalakotta (15°32'; 76°53'), Dt Bellary, a predominantly Neolithic [4.6.9] site with some straggling remains of the later Megalithic [4.17.8] or early historical period in the upper levels, excavated in 1963-4 by H.D. Sankalia and M.S. Nagaraja Rao (IAI 1963-4, p. 24). The Neolithic culture was of two phases, early and late, the later one being Chalcolithic [4.17.8] in character. The early phase had microliths of chert and other siliceous stones, pecked and ground tools, bone artefacts, beads of steatite and semiprecious stones and gold and copper objects. Fractional burial without grave furnishing was the norm, the burial marked by a granite

boulder over the pit. The paintings on pottery were post-firing. The ceramics was handmade employing the beater-and-anvil method. Uniformity of the surface was achieved by scraping off unwanted clay. Quartz powder and in some instance mica dust seem to have been used as *dégraissant*. The clay was finer than in the succeeding phase. The surface treatment comprised burnishing of the exterior and as far as hand could reach on the inside as well, besides the application of slip and roughening. Applied decoration, rarely resorted to, consisted of finger-tips. A few grey-ware pots, painted or unpainted, has perforated bottoms. Painting on the rims of the bowl and spout and external sides of the carinated vessel was confined to burnished grey ware, the designs being bands, curvilinear strokes, etc. The pigments were black, purple or violet and the paintings were executed after firing. The forms included the globular jar with flaring rim, bowl, cup, lid and goblet in the pale-grey ware and spouted vessel, kettle, storage jar, bowl with or without spout, shallow dish, um with flaring rim in brown and storage jar in buff ware.

In the later phase, besides the ceramics of the earlier phase, two industries—the black-and-red and dull-red wares—appeared; the former with a solitary white-painted specimen was confined to burials and seems to be turned on slow wheel. The dull-red ware was the major industry now. Paintings were executed before, firing, the pigments used being black and violet. The designs comprised horizontal and curvilinear bands. There was no deviation in the surface treatment. The representative shapes were the globular pot, jar, spouted vessel, basin, etc. Shapes in the black-and-red ware were the bowl and dish. Paintings in white on the inner side of the vessel consisted of vertical strokes.

The excavated houses or huts fall into three categories: (1) circular, with lower portions built of wattle and daub and with conical thatched roof resting on bamboos or wooden posts planted into the red *murram*; (2) circular, with sides partially supported or buttressed by heavy stone boulders but otherwise similar to the above; and (3) square or rectangular structures built against huge boulders for support and stability. An example of a circular house having post-holes at intervals ranging from 23 to 27 cm had a small refuse-pit slightly away from the structure and contained animal bones and other dumps. Another and bigger one was surrounded and buttressed by boulders. The depressions in the floors were filled up with stone chips levelled and then plastered over with mud. Sometimes the roof was supported by a single central pillar/post and the sides were made of bamboo screens plastered with mud. Such houses together with the rectangular ones belong to the later phase. For placing legged storage jars flat stones were utilized. Rectangular platforms of baked

earth with circular pot-rests also served the same purpose. It would be interesting to observe that the present-day Boyas of Tekkalakotta still construct circular huts with conical thatched roofs.

Burials were inside or even outside on the periphery of residences. Inhumation, fractional or extended, was the normal mode. Extended burials with grave goods was usual practice, the orientation being n.-s. Interment in multiple urns was also in vogue. Analysis of the skeletal and cranial remains has revealed a mixed population of Mediterranean and proto-Australoid stock, the former element predominating.

The stone tools fall into two categories: ground and pecked tools, and microliths. The former can be further classified into edge and non-edge tools. Igneous and metamorphic rocks like diorite, dolerite and basalt were used in the manufacture of edge tools. Typologically they are axes, chisels, chopping tools, wedges, points, etc. Most of these are pecked and ground and exhibit use marks. Instances of re-used axes are not wanting. Non-edge tools comprising hammers, pounders, axe-hammers, fabricators, dabbers, anvils, etc., are of coarse-grained rocks like granitic gneiss. The microliths are fashioned out of siliceous stones, chert being the major raw material and opal being rare. The repertoire comprise blades—parallel-sided, blunted-backed, serrated etc.,—lunates, trapezes, triangles, scrapers, flakes, flakes with crested-guiding ridge [16.5.2], borers, points and fluted cores. Marks of use and retouch are noticed on the artefacts.

The bone tools, manufactured out of long bones, ribs, metatarsals, metacarpals and phalanges of animals, consist of chisel, scraper, points, etc. Besides antlers have been also utilized as tools.

Vary few metal objects were recovered, the metals being gold and copper. In the early phase two (one broken) coiled ear ornament or pendant of gold with solid ends were found. The solitary copper axe of this phase recalls the JORWE example. In the succeeding phase copper was represented by coiled spiral of flat copper, a wire, a coiled ring and nail-head were the copper objects recovered.

The beads were of steatite and semiprecious stones, carnelian being the major material. Shell and glass were also used. The shapes were disc in steatite and short bicone, barrel, cylinder and circular in other materials. The terracotta objects were human torsos, bulls, lamps, holed and plain discs and oval and ground-edge potsherds.

Cattle, sheep, molluscs, rodents and tortoises were part of the dietary. Bones were split for marrow; charred bones indicate meat being roasted. Although there is no evidence for cultivation of cereals, yet from the evidence of sites of comparable cultures in this region we may

conjecture that cereals were cultivated. However charred *kulti* (*Dolichos lablab*) attest to its cultivation.

Mat-weaving was practised.

The Neolithic culture of Tekkalakotta exhibits affinity with the c. Indian [4.14.5] and upper Deccan [4.14.6] Chalcolithic in handmade painted grey and black-and-red wares, use crested-guiding ridge technique for the removal of flakes, circular houses with bamboo posts and wattle and daub walls and also burial practices, particularly urn-burials. An overall assessment would warrant placing the site in the upper Neolithic of the Karnataka region. ^{14}C dates range from between $1540 \pm 100\text{B.C.}$ and $1780 \pm 105\text{B.C.}$ for the early phase and $1610 \pm 140\text{B.C.}$ for the later phase.

Current Science, 34, 13, 1965, pp. 394-7. Nagaraja Rao, M.S., & Malhotra, K.C., *Stone Age Hill Dwellers of Tekkalakotta*, Poona, 1965. Sankalia, H.D., 1974, *Prehistory & Protohistory of India & Pakistan*, Poona, p. 515. K.S. RAMACHANDRAN

Tekkattur, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 1, 2, p. 126.

Tekkellapadu, Dt Krishna. The basement of an ancient structure and a portion of a pillar resembling those of the Amaravati *stūpa* were unearthed.

IAR 1956-7.

Tekwada, Dt Jalgaon, on the right bank of the Girna opposite the site of BAHAL. Four burials, three of them urn burials and one a pit burial, were excavated here by M.N. Deshpande of the ASI in 1956-7 (*IAR* 1956-7, p. 18). Of the urn burials one was disturbed but the other two each consisted of a large thick jar covered with a bowl. Both contained a few bones, seemingly of children; one had in addition two and the other five bowls of black-and-red ware [11.6], some of them with graffiti [20.1]. In one of the jars were found a few beads of paste, a spherical bead of carnelian and a circular tabular bead of steatite. The pit-burial, sunk deep into the yellow clay underlying the Black Cotton Soil [9.1], had the skeleton of an adult oriented n.-s., with two posts, one of fine grey ware and the other black-and-red, near its feet. These pots, together with a red-slipped globular painted in black, indicates that they belonged to Pd II B of BAHAL.

Telgi, Dt Bellary. Megalithic [4.17.8] site.

Subbarao, B., 1949, *Prehistoric & Early Historic Bellary*, unpublished thesis.

Teliwala, Dt Saharnpur, OCW [11.5] and grey ware associated with NBPW [11.16].

IAR 1965-6.

Tellanji, Dt Coimbatore. Small 'cromlechs'.

ASI-AR, 1934-5.

Tallur-Venkoram ($12^{\circ}32'$; $79^{\circ}35'$), Dt N. Arcot. Megalithic [4.17.9] site.

AI, 22, 1966, p. 32.

Telmcoha, Dt Dhanbad. Microlithic tools (of unspecified nature).

IAR 1959-60.

Telnur, Dt Mysore. Neolithic [4.6.9] remains and burnished brown, red and black-and-red wares.

IAR 1969-70.

Telod, Dt Bharuch, on the s. bank of the Narmada opposite MEHGAM, a late Harappa [4.10] site with a sturdy red ware painted in black.

Rao, S.R., 1962 & 1963, in *AI*, 18 & 19, p. 190.

Tembhurda, Dt Chanda. Late Stone Age (Mesolithic [4.5]) site.

IAR 1967-8.

Tembu, Dt Satara. Middle (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) tools.

IAR 1962-3.

Tenkara, Dt Palghat. Middle Palaeolithic [4.3] site the Bharathapuzha basin.

Joshi, R.V., & Rajendran, 1956, in *Bull. Deccan College Res. Inst.*, 35, pp. 54-5.

Tenkaraikottai, Dt Dharmapuri. Megalithic [4.17.9] cairn circles.

IAR 1970-1.

Tenkasi, Dt Tirunelveli. Megalithic [4.17.9] site with dolmens and sepulchral urns.

Sewell, R., 1882, *Antiquarian in the Presidency of Madras*, Madras.

Tenmalai, Dt Tirunelveli. Prehistoric site (of unspecified nature).

ASI-AR 1936-7. Cammiade, L.A., *Gazetteer of Tinnevely Dt*, p. 409.

Tentirupperai, Dt Tirunelveli. Megalithic [4.17.9] site.

ASI-AR 1902-3.

Tentla, Dt Purulia. Microliths (of unspecified nature).

IAR 1959-60, p. 48.

Tenur, Dt Madurai. Urn burial [4.17.9]. Also a mound with remains of ancient habitation. See VAIGAI VALLEY.

IAR 1957-8.

Teora ($30^{\circ}7'$; $76^{\circ}53'$), Dt Karnal. PGW [11.14] site.

AI, 10 & 11, 1954 & 1955, p. 141.

Tepra, Dt Santal Parganas. Microliths (of unspecified nature).

IAR 1963-4.

Ter ($18^{\circ}20'$; $76^{\circ}10'$), Dt Osmanabad, 16 km to the n.-n.-e. of Osmanabad, identified with ancient Tagara referred to in the *Periplus of the Erythraean Sea* and by Ptolemy. The former places it at ten days' march e. wards of PAITHAN and states that Tagara exported to Baryagaza (BHARUCH) ordinary cloth, different kinds of muslin as also mallow cloth. It was also the place where merchandise was brought from e. India for onward transmission to the w. Indian ports. Ptolemy too refers to it as an important town. The later kings of the Śilāhāra dynasty liked to call themselves Tagara-puravarādhiśvara.

Ter has long attracted the attention of archaeologists. In 1901 Cousens visited the site and described in detail the monuments thereof (*ASI-AR* 1902-3), including the temple of Trivikramēśvara which is one of the earliest structural *caitya* of early period now extant in

the Deccan. It comprises a shrine and a flat-roofed *maṇḍapa*, the former being the original *caitya*. Though brick-built, it has lost many of its details because of heavy applications of stucco. Even the *maṇḍapa* is rather late. On the basis of other evidence and the placing of sculptured slabs in the walls of later Jaina temples at Ter Cousens rightly suspected the existence of an early *stūpa*.

Explorations and small-scale excavations have so far given a variety of antiquities of the Sātavāhana period. Of these the most publicized antiquity is the ivory figurine of a woman, about 8 cm in height and possibly used as the handle of a mirror [18.5]. Compared to the famous Pompeii ivory the Ter specimen appears to be somewhat later, say the end of 1st century A.D. (Barrett, 1960).

Ter has given a large number of terracotta and kaolin figurines, beads of semiprecious stones, coins of the Sātavāhanas and the Kṣatrapas, coin and jewellery moulds, shell amulets and decorated handles and range of ancient ceramics like the NPBW [11.16] and the Red Polished Ware [11.23] besides scores of bullae [6.4]. The figurines are all executed in double moulds and are remarkable for the range of coiffure and ornaments. They are representative of Sātavāhana portraiture with round face, chubby cheeks, thick lower lip, broad nose and plumpness.

In spite of the objects collected on surface and forming a unique private collection, the excavations have not been much rewarding. The first excavation carried out by Chapekar gave simply a sequence of habitations indicated by ceramic evidence from the NPBW to the Red Polished Ware (Chapekar, 1969). The next excavation carried out by M.G. Dikshit (*IAR* 1967-8, p. 35) brought to light the base of a large brick *stūpa*, 26 m in diameter and resembling a *cakra* or wheel on plan. The *cakra* comprises eight spokes and circular ribs of brick. There are four *āyaka* platforms and a *Pradakṣiṇa-patha*. On epigraphical and numismatic data associated with it the *stūpas* can be dated to the first part of 2nd century A.D. The excavation also gave evidence of an apsidal brick temple with a *stūpa* within and a wooden *maṇḍapa* in front. Besides other antiquities Roman clay bullae and glass bottles of the Mediterranean type have also been recovered. The third and the most recent excavation gives evidence of what was possibly a formidable wooden palisade around the ancient city reminding one of the reference by Pliny to the 30 fortified towns of the Sātavāhanas. Tagara thus seems to have been a religious as well as commercial centre in the early centuries of the Christian era.

Barrett, D., 1960, *Ter*, Bombay. Chapekar, B.N., 1969, *Report on the Excavation at Ter*, Poona.—S.B. DEO

Terahi, Dt Shivpuri. Lower and Middle Palaeolithic

[4.2, 3] tools were found in the valley of the Manar rivulet.

IAR 1972-3.

Terdal, Dt Bijapur, in Taluka Jamkhandi (16°30'; 75°20'), a medieval town enclosed in a stone-walled fort, founded in Kuṇḍi-3,000 *viṣaya* in the Krishna valley in c. A.D. 1122 by Permaḍideva (Vikramāmditya VI, 1076-1126). The town is surrounded by plain fields of Black Cotton Soil [9.1] with a long range of hill plateaux of sedimentary rocks of sandstone, etc., on the e. In the year of the foundation was built a Jaina *basadi* in the Čaḷukya style dedicated to Neminātha tīrthankara, with a Kannada inscription narrating the foundation of the township, construction of the Jaina *basadi*, grant of land etc., in 1122, grant of certain taxes in 1181 and again grant of further land in 1187. The *basadi* has a *mānāstambha* erected in 1784. There are many other temples of later period of which that of Prabhusvāmin is popular.

But the antiquity of the habitation in the locality goes back to the prehistoric period, comprising the Chalcolithic [4.14.8] and Iron Age Megalithic [4.17.9] cultural phases. About 4 km w. of the locality is a Chalcolithic site known as Vibhutimaddi about 3½ hectares in area. Here are found slaggy ash lumps, ground stone axes of dolerite parallel-sided blades, fluted cores with prepared striking platform, one or two with crested ridge [16.15.2], microliths such as points, crescents, etc. made on chalcedony, chert and rarely agate, grey ware burnished and unburnished of various shades of colours in MASKI fabric, rather coarse pottery of brown-and-black ware of BRAHMAGIRI fabric, finely polished red and grey ware pottery of SAVALDA fabric [11.12], occasional terracotta figurines; animal bones highly encrusted with lime, etc. That the pottery of MASKI and SAVALDA fabrics with varieties of painted designs, stylized and geometrical, in violet black occurs in profusion is noteworthy. Besides, the infrequent painted designs are in bichrome red and black or in glue-like white. The pottery types of MASKI and BRAHMAGIRI fabrics are: the jar, trough, vase with flaring rim and in some cases with spout; bowl with out-turned edge; hemispherical bowl; platter; dish-on-stand; etc. Those of the SAVALDA fabric are: the vase with out-turned or curled or everted externally thickened or collared rim; pot with carinated body; vase with concave side and carinated body; jar with slightly concave side; lid with flanged waist; biconical lid; etc.

A small excavation by the writer disclosed that much of the thickness of the cultural debris had been removed in course of time for domestic purposes and the extant thickness was only 65 cm, within which could be distinguished three layers of one culture only yielding pottery of the types mentioned above and stumps of two

burnt wooden posts perhaps of a domestic structure. The charcoal samples from layers 3 and 2 are respectively dated by ^{14}C method to 3720 ± 120 and 3885 ± 100 , i.e. 1770 and 1935 B.C.

About 2 km e.-n.-e. of this site, in one of the terraces of the sandstone hillock was a low round barrow 6 m in diameter in the midst of the Iron Age Megalithic passage chamber tombs [4.17.9]. Excavation of the barrow revealed it to be a usual Chalcolithic burial containing fractional burial of a person in extended way, the skull fragments being towards e.-s.-e. and provided with burial furniture: four pottery vessels of MASKI fabric, two crescents, a parallel-sided blade and a plain copper bangle with unforged ends. The cairn packing, peculiar feature, sealing the pit was about 60 cm thick at the centre.

Two more sites but without the SAVALDA Ware are found elsewhere in the locality, painted pottery here being scarce.

The megaliths located in groups over a distance of 3 km on different terraces of the hillock, together numbering more than 500, are large passage chambers without port-hole, of essentially two types on the basis of the ground plan: passage chamber of Greek or Latin cross type and circular passage chamber. Within the chamber are pillars fixed in order to carry multiple capstones. The chambers of the two types are respectively closed within a rectangle or two concentric circles or a circle and a rectangle, with packing of rubble in between. The passage is almost invariably oriented s.wards or between s.-w. and s.-e. The first type has no parallel elsewhere in the region while the second is vaguely comparable with the excavated Megalith 3 of SANUR which is described as 'dolmenoid cist' with a short passage. One megalith of each type was excavated but all were found to have been previously disturbed. Very small fragments of human bones, highly burnished red ware as well as dull coarse red ware comprising the vase with collared or grooved rim and lid with flanged waist and Black-and-red Ware [11.15.3] including the shallow dish with vertical side the sagger base were obtained, besides the lower part of round-bottomed red vase containing small pieces of human bones is Megalith II. The passage chamber tombs are reasonably placed between 1200-700 B.C.

Sundara, A., 1975, *Early Chamber Tombs of s. India*, Delhi, pp. 26-30.—A. SUNDARA

Terra, Dt Kathua. Terrace 2 of the Ravi yielded pre-Sohan [4.2] type of huge flakes, rolled and heavily patinated early Sohan unifacial pebble choppers and Clactonian and Levalloisian flakes.

IAR 1965-6.

Tetariyo, (21°49'; 71°06'), Dt Amreli. Late Harappa [4.10] site corresponding to RANGPUR II B and II C.

AI, 18, & 19, 1962 & 1963, p. 207.

Tettu, Dt Prakasam. Lower [4.2], Middle [4.3] and Upper Palaeolithic [4.4.] site.

Aiyappan, A., 1942, *Manley Collection of Stone Age Tools*, Mem. ASI, 63, pp. 8-9.

Tevalam, Dt Dharmapuri. Megalithic [4.17.9] burial and habitation site.

IAR 1965-6.

Tewar. See TRIPURI.

Thachanathukara, Dt Palghat. Megalithic [4.17.10] site with menhirs.

IAR 1968-9.

Thadi, Dt Ahmadnagar. Tools of Series II (Middle Palaeolithic [4.3]), microliths [of unspecified nature] and early historical pottery characterized by black-and-red and red wares.

IAR 1960-1.

Thajiwor, Dt Anantnag. Neolithic [4.6.1] assemblage similar to that of BURZAHOM.

IAR 1962-3.

Thakurani¹, Dt Mayurbhanj. Neolithic [4.6.7] site.

AI, 16, 1960, p. 58.

Thakurani², Dt Singhbhum. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3]) tools and microliths (of unspecified nature).

IAR 1962-3.

Thakurdwara, Dt Nainital. PGW [11.14] site.

IAR 1960-1.

Thal, Dt Karnal. Site under occupation from the PGW [11.14] to the late medieval times.

IAR 1971-2.

Thalapatamalai, Dt N. Arcot. Rock-shelters and terraces with occupation debris yielding grey ware and ground stone axes, pounders, querns, mullers, mace-heads and several other stone artefacts.

IAR 1963-4.

Thalmer, Dt Dhule. Tools of Series I (Lower Palaeolithic [4.2]): Abbevillio-Acheulian handaxes, cleavers, discoids, scrapers, etc., made on trap and quartzite together with pebble tools. Tools of Series II (Middle Palaeolithic [4.3]): tools made on jasper, chert, chalcedony, etc., scrapers predominating and blades being comparatively few. Series III (Mesolithic [4.5]): blades, points, scrapers, awls, etc. Microliths and sometimes neoliths were found in association with black-and-red painted pottery and coarse grey ware similar to that from the Chalcolithic [4.14.8] levels at BRAHMAGIRI and BAHAL. The site also contained remains of burials and pots of the Black-and-red Ware [11.15.3] bearing graffiti. The Chalcolithic culture was superimposed successively by cultures of the Black-and-red Ware and a coarse red-slipped ware, the latter being assignable to the Sātavāhana period. Red Polished Ware [11.23] was also present.

IAR 1957-8.

Thana, Dt Unnao. NBPW [11.16] site.

IAR 1961-2.

Thanakotturdesam, Dt Malappuram. Rock-cut cave [4.17.10]—double-chambered with central pillars and benches—yielding four-legged jars, vases, bowls, ring-stands in Black-and-red Ware [11.15.3] and iron implements.

IAR 1966-7.

Thanasavali, Dt Panch Mahals. Late historical site.

IAR 1971-2.

Thaned, Dt Mandsaur. From Thaned to Jakaria a sufficiently high gravel was seen running parallel to the stream nearly 600 m to its s. and some pebble tools and Clectonian cleavers [4.2] were found there. The topmost part of an oval structure on the n. bank of the stream was found on what appeared to be a low mound, about 400 m n.-w. west of Thaned. It was formed of lumps of burnt clay and was surrounded by the remains of walls thereof.

IAR 1959-60.

Thanepada, Dt Dhule. Palaeoliths [4.2] and microliths (of unspecified nature).

IAR 1960-1.

Thaneswar. See KURUKSHETRA.

Thanmandi Tonda, Dt Gulbarga. Ash-mound [14.3].

Paddayya, K., 1973, *Investigations into the Neolithic Cultures of Shorapur Doab, s. India*, p. 5.

Tharanur, Dt Malappuram. Rock-cut Megalithic caves [4.17.10].

IAR 1969-70.

Tharpahara, Dt Mirzapur. Rock-shelters [13] with paintings.

IAR 1962-3. Misra, V.D., 1977, *Some Aspects of Indian Arch.*, Allahabad, p. 55.

Tharur. See TARUR.

Thataula (Khempur Kalera), Dt Saharanpur. OCW [11.5], PGW [11.14], washed grey ware, medieval glazed ware and terracotta skin-rubber [18.4].

IAR 1963-4.

Thathanodaimedu, Dt Madurai. The site near Bodinayakamer yielded microlithic implements comprising blades, flakes and cores and Russet-coated Painted Ware [11.22] as well as urn burials [4.17.9].

IAR 1957-8.

Thathapalli, Dt Coimbatore. Megalithic [4.17.9] cairn circles.

IAR 1962-3.

Thavanur, Dt Malappuram. *Topikals* [4.17.10].

IAR 1969-70.

Thebachada, Dt Rajkot. Late or decadent Harappa ware [11.14].

IAR 1961-2.

Thebhnonggiri, Thebhnonggiri, Dt Garo Hills. Lower and Middle Palaeolithic [4.2, 3] and Mesolithic [4.5] site yielding crudely flaked axes, knife, blades, microliths, arrowheads, points, cores and hammers. A large number of chipped celts, hammerstones, blanks, debitage, etc., were found. It appears that it was a factory site

where suitable rock fragments were collected and knapped for making Neolithic [4.6.6] tools.

IAR 1968-9; 1970-1; 1971-2.

Theh Polar, Dt Karnal. PGW [11.14] and late site. Excavation exposed structures, seals and coins of Vasudeva and the Yaudheyas.

ASI—AR 1921-2, p. 46-9; 1922-3, p. 89-90; 1930-4, pp. 142-4. IAR 1963-4, p. 91. Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 124.

Thelidagaramana, Dt Palamau. Middle Stone Age (Middle Palaeolithic [4.2]) site.

IAR 1971-2.

Thenampathy, Dt Palghat. Megalithic [4.17.10] site with cist burials.

IAR 1969-70.

Thengakkal, Dt Travancore. Megalithic [4.17.10] site with port-holed cists.

AI, 4, 1947-8, p. 307.

Thenmekkadu, Dt Chingleput. Megalithic [4.17.9] site. See PERAMBAIR.

ASI—AR 1908-9, p. 92.

Thenpakkam, Dt Chingleput. Megalithic [4.17.9] site. See PERAMBAIR.

ASI—AR 1908-9, p. 92.

Therazhandur, Dt Thanjavur. Megalithic [4.17.9] site containing pyriform urns and associated pottery.

IAR 1955-6.

Therya, Dt Bharatpur. PGW [11.14] site.

IAR 1971-2.

Thesaria, Dt Banas-Kantha. Microliths (of unspecified nature) and the historical [4.18.2] red ware.

IAR 1964-5.

Theur (18°31'; 73°55'), Dt Pune, situated on the Mula-Mutha river, 24 km n. of Pune. Excavation by the ASI under S.R. Rao in 1969-70 (IAR 1969-70, pp. 27-9) showed that the earliest occupation began during the Chalcolithic period [4.14.6]. Its distinctive feature is the occurrence of five stone circles varying in diameter from 18 to 28 m, situated at a distance of nearly 1 km from the right bank of the river on the Theur-Naigaon road, while a 4 m high mound lies on the left bank. Two of the stone circles were excavated and these were found to enclose huts of the Chalcolithic period. The houses were rectangular on plan and showed three phases of occupation. In earliest phase a double-pot burial [12.4] was found in the courtyard of a rectangular mud house.

The group of huts was enclosed by large boulders laid in one or two concentric circles. In the outer circle the boulders were erected vertically, filled in with *murrum* and capped by one or two courses of rubble. This was possibly done to prevent erosion by water.

The black-and-red ware [11.6] forms nearly 40% of the total pottery from the site, the other wares being the black, coarse grey, sturdy red and coarse red wares. Sherds of the Jorwe Ware [11.11] were found in the third phase. The black-and-red ware is of thin fabric, well-

Tilwara

fired has a smooth shining surface and resembles that obtained from RANGPUR II C and III. Certain vessels have graffiti marks [20.1] on the interior.

Among the small finds mention may be made of: saddle-querns, pounders and mullers [6.19]; parallel-sided flakes; copper bangles; beads of jasper, chert, shell and agate; terracotta bull figurines; and toy-cart wheels [16.19].

The excavator has dated this Pd from c. 1500 to 1200 B.C.

—H.P. RAY

Thimmabhupalapuram, Dt Chingleput. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3] tools.

IAR 1963-4.

Thimmapuram, Dt Chingleput. Megalithic [4.17.9] site. See PERAMBUR.

ASI—AR 1908-9, p. 92.

Thindu, Dt Trichūr. Microlithic (of unspecified nature) site.

IAI 1971-2.

Thinthini, Dt Gulbarga. Megalithic [4.17.8] site with remains of ancient copper workings and iron smelting.

Jour. Geological Survey of Hyderabad, 4, 1, p. 157.

Thirana, Dt Karnal. Late Harappa [4.10] site.

Suraj Bhan, & Shaffer, J.G., 1978, in *Man & Environment*, 2, p. 62.

Thongalakoppa, Dt Kolar. Site with Black-and-red Ware [11.15.3] and red ware.

IAI 1972-3.

Thoppurganigarahalli, Dt Dharmapuri. Megalithic [4.17.9] burial site.

IAI 1969-70.

Thoriali, Dt Surendranagar. Middle Stone Age (Middle Palaeolithic [4.3]) site, the industry characterized by blade flakes, scrapers, burins, points and cores of prepared platform technique.

IAI 1961-2.

Thozheppadam, Dt Trichūr. Microlithic (of unspecified nature) site.

IAI 1971-2.

Thusekgiri, Dt Garo Hills. Neolithic [4.6.6] site yielding stone axes, crudely shouldered axes and near-cylindrical chisels.

IAI 1965-6.

Thyaranahalli, Dt Kolar. Megalithic [4.17.8] burial site.

IAI 1969-70.

Tickar, Dt Fatehpur. NBPW [11.16] site.

IAI 1958-9.

Tidian, Dt Madurai. Neolithic [4.6.10] factory site.

IAI 1960-1.

Tigrana¹, Dt Bhiwani. Pre-Harappa [4.8] and late Harappa [4.10] site comparable to Late SISWAL and MITATHAL II B.

Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 125.

Tigrana², Dt Hissar. Early historical [4.18.1] site.

Silak Ram, 1972, unpublished thesis, Kurukshetra Univ.

Tigri, Dt Saharanpur. Early historical [4.18.1] site.

IAI 1963-4.

Tikari, Dt Varanasi. NBPW [11.16] site.

IAI 1961-2.

Tikarpara, Dt Dhenkanal. Lower Palaeolithic [4.2] site.

Mohapatra, G.C., 1962, *Stone Age Cultures of Orissa*, Poona, pp. 37-50.

Tikri, Dt Lucknow. NBPW [11.16] site.

IAI 1967-8.

Tila, Dt Vidisha. Early, Middle (Lower, Middle Palaeolithic [4.2, 3]) and Late Stone Age (Mesolithic [4.5]) tools.

IAI 1963-4, p. 89.

Tila Bani, Dt Purulia. Microliths (of unspecified nature).

IAI 1959-60.

Tilali, Dt Dhule. Chalcolithic [4.14.6] habitation site.

IAI 1960-1.

Tilapur, Dt Ahmadnagar. Chalcolithic [4.14.6] site also with early historical [4.18.9] remains.

IAI 1959-60.

Til-Begumpur, Dt Bulandshahr. Early historical [4.18.1] site.

IAI 1962-3.

Tildah, Dt Midnapur. Excavation brought to light brick-built structures of two phases, the earlier one originating in the Gupta period. Besides pottery the finds consisted chiefly of terracottas. Of the pre-Gupta finds mention may be made of a terracotta figurine and a sherd of the NBPW [11.16].

IAI 1954-5.

Tillaiyadi, Dt Thanjavur. Megalithic [4.17.9] Black-and-red Ware [11.15] and sherds of urns.

IAI 1964-5.

Tilman, Dt Jabalpur. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAI 1962-3.

Tilpat, Dt Gurgaon. PGW [11.14] and NBPW [11.16] site.

AI, 10 & 11, 1954 & 1955, pp. 141, 146. Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 126.

Tilwara (25°52'; 72°50'), Dt Barmer, on the left bank of the Luni, the microlithic site lying on a low sand-dune 2 km s.-w. of the village in the old bed of the river, excavated by V.N. Misra of the Deccan College and L.C. Leshnik of the Univ. of Heidelberg (IAI 1967-8, p. 39). The microlithic industry prevailed through the deposit, which has been divided into two phases, the lower one regarded as Mesolithic [4.5]. The greatest concentration of microliths was between 20 and 35 cm below surface, the main types consisting of backed blades, obliquely blunted blades, lunates triangles, points and a few trapezes of fine workmanship. Between 20 and 30 cm trapezes of fine workmanship. Between 20 and 30 cm Quartz, quartzite, chert and rhyolite were the raw

materials, quartz being available in the river-bed and the other materials in the Malani formations, a few km e. of Tilwara. Several district floor levels were found. A large number of stones placed at varying distances, some probably making the outlines of a circular hut, were met with. Pottery was noticed throughout the deposit but was more abundant down to 15 cm from surface, just above the horizon that had a concentration of microliths. It was wheel-made and consisted of two wares—grey and red. Wide-mouthed grey-ware *hūṇḍis* of various sizes, with incised designs on their flat rims, had a thin dull-grey slip and a darkish core and had sooted bottoms, indicating their use as cooking vessels. The red ware, with a pale-red slip and reddish core, was represented by the *loṭā*-like vessel and shallow dish. The faunal remains [15.1.5] belonged to the domesticated cattle and sheep/goat and molluscan shells. See 9.2.

Misra, V.N., 1971, in *Poona Univ. Jour. (Humanities Section)*, 35, pp. 59-77.—A. GHOSH

Tilwaraghat, Dt Jabalpur. Palaeolithic, scrapers, flakes and microliths (of unspecified nature).

IAR 1960-1.

Timarna, Dt Etah. PGW [11.14] site.

IAR 1960-1.

Timarpur, Dt Delhi. PGW [11.14] was found at the Wazirabad Barrage.

IAR 1971-2.

Timbarva, (22°2'; 73°14'), Dt Vadodara, with a mound known as Borik, w. of village distance of about 4 km. A vertical excavation was conducted on the mound by the M.S. University of Baroda in 1953, exposing a deposit of about 5 m divided into three Pds.

Pd I, second half of the 1st millennium B.C. This Pd is marked by the black-and-red pottery [11.6], along with which are found red and black pottery. In the upper levels of this Pd also occurs the NBPW [11.16]. Other antiquities such as spherical beads, stoppers, skin rubbers [18.4] and figurines of the mother goddess [12.6] made of terracotta, legged querns [6.19] and a celt-like object of stone, iron arrowheads, blades (?), a plough-share (?) and a copper ring have also been recovered.

Pd II, beginning of the Christian era to A.D. 300. The Red Polished Ware [11.23], crude gritty ware, plain red ware, burnished red ware and mica-slipped pottery are characteristic of this Pd. Other antiquities like beads of various shapes, stoppers, discs [6.7.3], skin-rubbers, a stone sharpener (?), a copper bar, a nail and a globular pendant of gold foil with its upper part decorated have been found.

Pd III, A.D. 600-1000. The main pottery of this Pd is the painted red burnished ware with designs in black over a white background. Together with it black burnished ware, red-slipped ware with black interior, crude red ware, etc., are also available. The other antiquities are terracotta arecanut-shaped beads, a

fragment of a plaque, bone points, an antimony rod [18.1] (?), a quern (?), an iron nail and an iron wire turned into ring.

Mehta, R.N., 1955, *Excavations at Timbarva*, Baroda.—R.N. Mehta.

Timbnigatha, Dt Surat. Early, Middle (Lower, Middle Palaeolithic [4.2, 3]) and Late Stone Age (Mesolithic [4.5]) sites.

IAR 1967-8.

Timijepalli, Dt Dharmapuri. Megalithic [4.17.9] sites with port-holed cists.

IAR 1967-8.

Timmalapuram, Dt Bellary. Megalithic [4.17.10] site.

Subbarao, B., 1949, *Prehistoric & Early Historic Bellary*, unpublished thesis.

Timmapur, Dt Raichur. Megalithic [4.17.8] site with stone circles.

Jour. Geological Survey of Hyderabad, 3, 1, pp. 76-82.

Timmapuram¹, Dt Anantapur. Ground celts of Neolithic complex [4.6.8].

IAR 1964-5.

Timmapuram², Dt Kurnool. Stone tools, megaliths [4.17.7] and remains of early historical period [4.18.10] were found. Disturbed megaliths at a number of places yielded the Black-and-red Ware [11.15]. Historical remains included the Red Polished Ware [11.23] and sometimes also the Black-and-red Ware.

IAR 1959-60.

Timmayapalem, Dt Krishna. Site with dolmens [4.17.7].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Timmayyagunta, Dt Chittoor. Upper Palaeolithic [4.4] site.

Sankalia, H.D. 1974, *Prehistory & Protohistory of India & Pakistan*, Poona.

Timram, Dt Chanda. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1961-2.

Timramith, Dt Chanda. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAR 1961-2.

Tinchha, Dt Indore. Microliths (of unspecified nature).

IAR 1959-60.

Tingalur, Dt Coimbatore. Russet-coated Painted Ware [11.22].

IAR 1961-2.

Tinsi, Dt Sagar. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1963-4.

Tiparpur, Dt Muzaffarnagar. PGW [11.14] and medieval ware.

IAR 1962-3.

Tippanahal, Dt Raichur. Neolithic [4.6.9]-Chalcolithic [4.19.8] and Megalithic [4.17.8] site.

IAR 1970-1. *Karnataka Bharati*, 6, 1, pp. 64-75.

Tippanahalli, Dt Dharmapuri. Megalithic [4.17.9] cists.

IAR 1964-5.

T. Kallupatti

Tirali, Dt Madurai. Late habitation site.

IAR 1958-9.

Tira-Sujanpur, Dt Hamirpur. Lower Palaeolithic [4.2] site in the BEAS VALLEY.

Mohapatra, G.C., 1966, in *Bull. Deccan College Res. Inst.*, pp. 221-37.

Tirth, Dt Gulbarga. Ash-mound [14.3] at a Chalcolithic [4.14.8] site.

Paddayya, K., 1973, *Investigations into the Neolithic Culture of Shorapur Doab, s. India*, p. 7.

Tiruchendur, Dt Tirunelveli. Microlithic [4.5] site.

IAI 1968-9.

Tirukkadavur, Dt Thanjavur. Early historical [4.18.12] site.

IAI 1961-2.

Tirukkakara, Dt Ernakulam. Laterite menhirs [4.17.10].

IAI 1965-6.

Tirukkambuliur, Dt Tiruchchirappalli. Excavation at the extensive mound revealed three Pds. Pd I was characterized by the Russet-coated Painted Ware [11.22] and the Black-and-red [11.15]. In the later levels of the Pd was found a fine red-slipped pottery signifying new influences. Pd II was marked by the gradual reduction in the use of the Black-and-red Ware and the emergence of the fine red-slipped pottery. Alongside occurred an unslipped red ware with coarser texture. Pd III was marked by the occurrence of the coarser ill-fired red-slipped and unslipped pottery, the latter in a greater proportion. Some structures both of mud brick and baked brick also occurred. Beads, shell bangles, terracotta figurines, etc., were found at all levels. While Pd I was Megalithic, Pd II belonged to the 3rd-4th to the 9th-10th century and Pd III to the 14th-15th century.

IAI 1961-2. Champakalakshmi, R., 1975-6, in *Purattatva*, 8, pp. 112-3.

Tirukkattalai, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 1, 1, pp. 515-8.

Tirukolur, Dt Tirunelveli. Megalithic [4.17.9] site.

ASI-AR 1902-3.

Tirumalai, Dt N. Arcot. Early Stone Age (Lower Palaeolithic [4.2]) and Neolithic [4.6.10] site.

IAI 1965-6.

Tirumalairayanpatnam, Dt Thanjavur. Sherds of crude Black-and-red Ware [11.15.3].

IAI 1964-5.

Tirumalpur, Dt N. Arcot. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAI 1964-5.

Tirumanikkam, Dt Madurai. Microlithic with painted black-on-red and red and black wares. Also urn burials [4.17.9]. See TANGALACHERI.

IAI 1958-9.

Tirumullavoil, Dt Chingleput. Lower Palaeolithic [4.2] site.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Tirunakkara, Dt Kottayam. Menhirs [4.17].

IAI 1963-4.

Tirunavaya, Dt Malappuram. Megalithic [4.17.10] site with menhirs.

IAI 1970-1.

Tirupati, Dt Chittoor. A Palaeolithic [4.2] industry comprising mostly developed Acheulian handaxes was found in the Swarnamukhi basin.

IAI 1960-1.

Tirupatur, Dt Madurai. A Neolithic [4.6.10] flake saw.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Tiruppanmur, Dt N. Arcot. Late historical [4.9.10] site.

IAI 1967-8.

Tirupporur, Dt Chingleput. Megalithic [4.17.9] site.

AI, 22, 1966, p. 31.

Tiruppuliyankudi, Dt Tirunelveli. Megalithic [4.17.9] site.

ASI-AR 1902-3.

Tiruppur, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 1, 1, pp. 515-8.

Tirupurapuram, Dt Krishna. Site with dolmens [4.17.7].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Tiruthu, Dt Tirunelveli. Megalithic [4.17.9] site with urn burials together with smaller ceramic wares, ornaments, weapons, utensils and the like. See ADICHANALLUR.

ASI-AR 1903-4.

Tiruvakkarai, Dt S. Arcot. Pointed-butt polished stone axes were found in an urn field about 10 km w. of Pondicherry.

AI, 4, 1947-8, p. 296.

Tiruvancare, Pondicherry. Megalithic [4.17.9] site.

Casal, J.-M., & C., 1956, *Site Urbain et sites funéraires des Environs de Pondichery-Virampatnam-Mouttrapaleon, Souttokery*, Paris.

Tiruvelangad, Dt Chittoor. Port-holed cists [4.17.7].

AI, 4, 1947-8, p. 306.

Tiruvenkadu, Dt Thanjavur. Early historical [4.18.12] site.

IAI 1961-2.

Tiruvilwamala, Dt Trichur. Port-hold cist [4.17.10] yielding pots decorated with white or yellow curvilinear pattern under a russet slip [Russet-coated Painted Ware, 11.22?]

Man, 1937, article 179.

Tisgoan, Dt Ahmadnagar. Two Lower Palaeolithic [4.2] sites.

IAI 1953-4.

Tisi, Dt Dhule. Chalcolithic [4.14.6] habitation site.

IAI 1960-1.

Titana, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAI 1964-5.

Titwi, Dt Chanda. Lower Palaeolithic [4.2] site.

IAI 1960-1.

T. Kallupatti, Dt Madurai. Microlithic and sherds of

black and black-and-red wares painted in white pigments with a variety of designs like horizontal and oblique lines, concentric semicircles, dots etc. The site also yielded a sherd of black-on-red ware. Urn burials were noticed.

IAR 1958-9; 1960-1.

T. Narsipur, Dt Mysore, situated on the left bank of the river Kaveri, where the State Dept of Arch. conducted excavation from 1958-60 and 1961-2 (*IAR 1958-9*, p. 33; *1959-60*, p. 38; *1961-2*, p. 35). The excavation resulted in the discovery of a Neolithic [4.6.9] settlement with a distinct Megalithic [4.17.8] phase. Moreover in 1960-1 in course of exploration (*IAR 1960-1*, p. 28) the ASI recovered Middle Palaeolithic [4.3] tools including flakes of jasper and quartz and a few Neolithic [4.6.9] objects from the adjoining river bank.

In the excavation were obtained in Pd I a thick and coarse grey ware, burnished orange-red and brown ware, thin coarse and handmade burnished grey ware and a fragment of the Jorwe Ware [11.11]. Incised designs such as crossed, straight or oblique lines and herring-bone pattern appear on the sherds of thick grey ware. The orange-red sherds are painted with curved lines in violet. Throughout this deposit the channel-spouted bowl and vase in coarse grey or buff ware were found with the lip painted in red ochre. Other finds consist of polished stone axes, pounders, a single-fluted core and a large number of clay head-rests [12.15]. Copper is absent. A noteworthy feature is the discovery in a Neolithic burial of a skeleton laid in an e.-w. direction with its hands on the abdomen. The burial also contained two handmade pots of cream ware, a channel-spouted shallow bowl and a clay head-rest.

Pd II, Megalithic, is represented by various shapes of the typical Black-and-red Ware [11.15]. The pots are brightly polished, coloured and painted and bear graffiti [20.1]. Iron is represented by a solitary piece of a dagger.

Overlying the Megalithic deposits in the river section are polished stone axes and a few sherds of the Russet-coated Painted Ware [11.22] with kaolin decoration. The evidence from the upper levels suggests that the area was affected by constant floods, due to which there is a marked absence of distinct cultural occupations.

Seshadri, M., 1971, *Report on the Excavations at T. Narsipur*, Mysore. —A. BANERJI

Todaiyur, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 1, pp. 575-8.

Todia Timbo, Dt Kutch. Harappa [4.9] site about 7 km w. of Kothara. The dish-on-stand and convex-sided bowl were some of the important types [11.3].

IAR 1955-6.

Todio (23°05'; 68°55'), Dt Kutch. Late Harappa [11.10] settlement.

AI, 18 & 19, 1962 & 1963, p. 207.

Togalange, Dt Andaman. Kitchen-midden [14.11] site. Cipriani, L., 1963, in *Current Anthropologie*, 3, pp. 208-9.

Togalgudda, Dt Raichur. Rock paintings [13]. In some of the caves are remains of iron-smelting operation. *AR Hyderabad Dept of Arch.*, 1937-40, pp. 25-6.

Togarapalli, Dt Dharmapuri. Neolithic [4.6.10] axes and pottery. Also Megalithic [4.17.9] and early historical [4.18.12] site.

IAR 1966-7.

Toharganj, Dt Ghazipur, NBPW [11.16] site.

IAR 1959-60.

Toka, Pravara-Sangam, Dt Ahmadnagar. Painted pottery with microliths.

AI, 9, 1953, p. 68.

Tokapalli, Dt Kurnool. The site on the Tigaluru yielded Series I and II (Lower and Middle Palaeolithic [4.2, 3]) tools. Megaliths [4.17.7] and remains of early historical period [4.8.10] were also found.

IAR 1959-60.

Tokartala, Dt Dhule. A thin and roundish flake of bone with signs of working on one face was recovered. Its stratigraphic horizon corresponded to that of the microlithic industry in the section of the Ranka-nala. Microliths of chalcedony, jasper and agate were collected.

IAR 1959-60.

Tokas, Dt Hissar. Red ware site.

IAR 1966-7.

Tokkum, Dt Chandrapur. Late Stone Age (Mesolithic [4.5]) site.

IAR 1970-1.

Tokra, Dt Ujjain. Early historical [4.18.7] site.

IAR 1971-2.

Tolkatta, Dt Hyderabad. Russet-coated Painted Ware [11.22].

AI, 4, 1947-8, p. 310.

Tomrer, Dt Bharatpur. PGW [11.14] site.

IAR 1970-1.

Tomur. See TUMBOOL.

Tondgaon, Dt Akola (?). Late Stone Age (Mesolithic [4.5]) site.

IAR 1965-6.

Toner, Dt Ranchi. So-called Asura [14.4] site.

Roy, S.C., 1915, in *Jour. Bihar & Orissa Res. Soc.*, 1, p. 232.

Tonk, Dt Tonk. Site on the Banas with Series I (Lower Palaeolithic [4.2], tools.

IAR 1958-9.

Tonkwa (Adwa) Dt Allahabad. Late Stone Age (Mesolithic [4.5]) site.

IAR 1969-70.

Topanahalli, Dt Kolar. Megalithic [4.17.8] stone circles.

IAR 1970-1.

Topra Kalan, Dt Karnal. PGW [11.14] site.

IAR 1968-9.

Topram, Dt Medak. Megalithic [4.17.7] site with stone circles and menhirs.

IAR 1953-4.

Toranavavi, Dt Coimbatore. Cairn circles [4.17.9].
IAR 1961-2.

Torangkbel, Dt Ranchi. Fragmentary axe of gneiss.
 Roy, S.C., 1916, in *Jour. Bihar & Orissa Res. Soc.*, 2, p. 70.

Toranikal hill, Dt Kurnool. Neolithic [4.6.8] implements including flakes, scrapers and cores.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Torappalli, Dt Dharmapuri. Dolmenoid and port-holed cists [4.17.6].
IAR 1968-9.

Tornagallu hill, Dt Bellary. Neolithic [4.6.9] site.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Torpa, Dt Ranchi. Microliths (of unspecified nature).
IAR—1964-5.

Tosaniya, Dt E. Nimar. Microliths (of unspecified nature).
IAR 1959-60.

Tota Tikri, Dt Andaman. Kitchen-midden [14.11] site of sub-Neolithic culture.
 Information from P. Ganguly.

Tottikuppam, Dt Dharmapuri. Megalithic [4.17.9] site with dolmenoid cists and stone circles.
IAR 1967-8.

T. Puduppatti, Dt Madurai. Extensive site on the left bank of the Marattar yielding what may be called an advanced stage of Series II (Middle Palaeolithic [4.3]) tools, comprising a variety of flake scrapers, tanged points, lunates and a unique of double-shouldered arrowhead. Many tools show prepared platforms and betray an advanced (Levalloisean [16.15]) technique of flaking.

IAR 1960-1.

Trilokapur, Dt Gorakhpur. Black-and-red Ware [11.6.3] and NBPW [11.16].
IAR 1963-4.

Triprangode, Dt Kozhikode. Rock-cut caves [4.17.10]. Vessels of Megalithic Black-and-red Ware [11.15.3] were also found.

IAR 1962-3.

Tripuri, Tewar, Dt Jabalpur, also called Karanbel after the Kalacuri king Karna, bounded by a tributary of the Narmada on three sides. In early historical times Tripuri had a coinage of its own. A. Cunningham noticed here a rampart wall (*ASI—AR*, 9, p. 54). Finding a few sherds of the NBPW [11.16] on the s. slope of the 7 m high mound, M.G. Dikshit excavated the site in 1951-3 on behalf of the Univ. of Saugar and identified five Pds.

The earliest Pd, dated to c. 1000 B.C., was marked by microliths—cores, long blades with worked edges, lunates, crescentic blades, arrowheads and scrapers made on agate, chalcedony, quartz, jasper and flint—and a black-painted red pottery on the Black-Cotton Soil [9.1]. Large lobular vessels were painted in black with thick horizontal and concentric bands. The pottery

was turned on slow wheel and had a micaceous red slip in the interior. There were no copper objects.

Pd II, 400 to 300 B.C., had the Tripuri and punch-marked [3.1] coins and the NBPW, the shapes in which were the dish with sagger base and everted rim, knobbed jar, flat-bottomed carinated bowl and sherds with the solar symbol. Besides there were sherds of buff-slipped and russet-red and black wares. The shapes in the last two comprised the dish with everted rim, rim of a bowl and a cup. The other antiquities were beads of carnelian, agate and crystal, a terracotta fish, skin-rubbers [18.4], bone points, games objects, iron nails and rings, copper antimony rods [18.1] and bell-shaped objects and pulley-shaped objects of glass, jasper and crystal.

Pd III, 300 to 100 B.C., its latter part coinciding with the Sātavāhana rule, as indicated by Sātavāhana coins, had mud-brick rooms on stone foundations in mud mortar, the corners of which were connected to two ring-wells [14.15], over 1 m apart from each other. One of the wells was lined with 17 courses of rings with rough and large refuse pots, 45 cm in diameter and 20 cm in height, placed over one another inside. The pottery included a very fine red ware [Red Polished Ware?, 11.23] and buff-, white- and yellow-slipped wares. Other household articles comprised objects of soapstone, bone points, gamesmen [6.7.2], beads of carnelian, agate, crystal, glass, shell and terracotta, iron arrowheads and a tanged knife. Coins with the Brāhmī legend *Tripurī* and lead and copper coins of Sirī Bātavāhana indicate the date of the Pd.

Belonging to Pd IV, 100 B.C. to A.D. 200, were two Buddhist *vihāras*, one of them with a well and a brick-lined refuse-pit. Inside another well, rectangular in shape and with the shaft going down to a depth of 4-6 m. and with rope marks on the inner face and depressions on the edging floor for keeping water vessels, were pieces of mortar pestles, potsherds with Buddhist symbols, pebbles and steatite caskets. A 2-1 m deep soak-pit lined with wedge-shaped bricks was found in the s.-e. corner of one of the monasteries. A large quantity of kaolin pottery, black ware and ware stamped with Buddhist symbols formed the ceramic contents of the Pd. The kaolin ware was represented by the bowl with round or omphaloid base, neck of a jar with the *tri-ratna* symbol, jar with looped handle, shallow cup and handle of a mirror bearing zigzag lines and simple curves in the exterior. Beads of usual semiprecious stones, glass, faience and terracotta, a tanged knife with curved blade, nails, door-clamps and rings of iron, antimony rods and receptacles of copper, terracotta figurines of the mother goddess [12.6] and the torso of a bull, a shell 'head scratcher', stone querns, lead coins, and an ivory comb and bone points were the other finds.

Belonging to Pd V, A.D. 200 to 400, were a soak-pit

with 37 courses of bricks cut into the natural soil and a rectangular enclosure of bricks, $40 \times 25 \times 8$ cm in size at its top, with evidence of two timber cross beams in the mortise holes in the walls, a brick wall running to 2 m and a pavement. The pottery was mica-dusted. Beads of semiprecious stones including beryl and of gold and terracotta, a tanged iron knife or dagger; a socketed and mid-ribbed javelin and ring, terracotta figurines, a stone quern and a plate with miniature animal figurines at the top were the other finds which also included punch-marked coins indicating their prolonged currency.

The late historical Kalacuri occupation of the site was represented by a large circular platform, 1 m or more in height and 35-5 m in diameter, fragmentary sculptures, mouldings, bases of pillars and pilasters, inscribed pedestals and a terracotta rider. An inscription recorded the building of a *golaki-maṭha* in the reign of Yuvarāja I Keylūravarṣa.

Excavation was resumed by the State Dept of Arch., Deccan College and Univs. of Baroda and Saugar during 1955-9 (*IAR* 1965-6, p. 21; 1966-7, p. 17; 1967-8, p. 23; 1968-9, p. 11), revealing four Pds, besides black-painted red ware and microliths in the lowest levels.

Pd I, c. 500 to 300 B.C., had mud-brick houses with thatched roofs and terracotta tiles [4.6.4], lime-plastered floors, patches of rammed mud floors and five pits. The pottery including black-and-red ware, the NBPW, white-slipped ware, coarse red ware, beads, objects of iron, terracotta, stone and copper bull figurines, two Mauryan stone seals and two human skulls. In Pd II, c. 300 to 100 B.C., were found mud and baked-brick houses with roofs of terracotta tiles fixed on wooden beams with iron nails, ring-wells and soak-pits. In addition to the ceramics of the preceding Pd a fine and red ware was found along with punch-marked and cast coins [3.1] of copper, objects of soapstone, beads, bone points and storage jars. Pd III, 100 B.C. to A.D. 200, had a baked-brick ($40 \times 25 \times 7.5$ cm) apsidal platform, a brick wall, ring-wells, fire-pits, soak-pits, storage jars, post-holes on the floor and a charred wooden pole. The pottery mainly comprised a stamped ware bearing Buddhist symbols, kaolin ware and sprinklers in the Red Polished Ware. Also recovered were Tripuri coins, copper, lead and potin coins of Siri Sātakanī and Siri Sāta and of the Kṣatrapas, besides a few stone vessels, copper objects and ear-rings of jasper. Pd IV, A.D. 200 to 400, revealed structures of baked brick including a circular pavement and a structure meant for the manufacture of metal implements, such as socketed arrow and lanceheads, clay sealings, mica-dusted pottery, sprinklers, punch-marked coins, glass and shell beads, various small objects of iron, copper, terracotta and stone and a few clay sealings with symbols and legends reading Vasiṣṭhiputra Mahārāja, Śivabodhi,

Vasubodhi, Śribodhi and Candrabodhi, the last four names indicating the existence of a Bodhi dynasty following the Sātavāhanas. Specially noteworthy was the discovery of an Indo-Sassanian coin and a gold Kalacuri coin, characterizing the late historical period, which also had baked-brick walls and a rammed floor with post-holes with other Kalachuri coins.

Banerji, R.D., 1931, *Haihayas of Tripuri & Their Monuments*, Mem. ASI, 23. Dikshit, M.G., 1955, *Tripuri: 1952*, Madhya Pradesh Government.—A. BANERJI

Trisulam, Dt Chingleput. Megalithic [4.17.9] site.

AI, 22, 1966, p. 29.

Tsanagundla Durg, Dt Kurnool. Microliths and a pot of brown ware suggesting a Chalcolithic [4.14.7] culture. Also Neolithic [4.6.8] flakes.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*. Madras. Gordon, D.H., 1950, in *AI*, 6, p. 84.

Tukarguda, Dt Chandrapur. Lower Palaeolithic [4.2] site.

IAR 1970-1.

Tukrawa, Dt Chittaurgarh. Site with Early Stone Age (Lower Palaeolithic [4.2]) tools in the Berach valley.

IAR 1962-3.

Tukwada, Dt Surat. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1963-4.

Tuljapur-Garhi, Dt Amravati(?). Late Stone Age (Mesolithic [4.5]), Chalcolithic [4.14.6] and early historical site. The Chalcolithic pottery included characteristic painted pottery of the upper Deccan Chalcolithic complex.

IAR 1965-6.

Tuljapuri, Dt Amravati (?). Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1965-6.

Tulleh, Dt N. Arcot. Pointed-butt polished stone axes [4.6.10].

Brown, J.C., 1917, *Cat. Prehistoric Antiquities in the Indian Museum*, Simla.

Tulsipur, Dt Bankura. Excavation at the mound below the confluence of the rivers Kasal (Kangcavati) and Kumari revealed three main phases, of which the first two showed a continuous development. The earliest phase was represented by some floors and a pit and gritty red-slipped, black-and-red and micaceous wares. In the next phase black-polished and grey-polished pottery, a few Chalcolithic [4.14.4] gritty red-slipped wares and some black-and-red sherds were found. Iron was found throughout both the phases. The black-and-red ware types show some similarity with those from sites in Birbhum and Burdwan. The last phase was characterized by a bright-red ware occurring in recent sand which covered much of the site of a depth of about 50 cm.

IAR 1965-6; 1967-8.

Tulukanveli, Dt S. Arcot. Megalithic [4.17.9] burials

with pyriform urns.

IAR 1958-9.

Tuman, Dt Bankura. Microliths (of unspecified nature).

IAR 1959-60.

Tumangdungri, Dt Singhbhum. Tools of the Early and Middle Stone Ages (Lower and Middle Palaeolithic [4.2, 3]) were found along the Subarnarekha.

IAR 1962-3.

Tumarguda, Dt Chandrapur. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAR 1970-1.

Tumbool, **Tomur**, Dt Chingleput. Lower Palaeolithic [4.2] site on the river Korttalayar.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Tumgi, Dt Bijapur. Chalcolithic [4.14.8] site. See AJMEL.

IAR 1959-60.

Tumkur, Dt Gulbarga. Middle Palaeolithic [4.3] site.

IAR 1968-9.

Tundiara, **Tundiari valley**, Dt Mirzapur. Early Stone Age (Lower Palaeolithic [4.2]) tools were found at Kosakangarha and Barokhora. Microlithic sites were located at Pери and Mahuli. See SEOLI and TUNDIARI.

IAR 1968-9.

Tuneri, Dt Nilgiri. Megalithic [4.17.9] site with cairns yielding pottery, iron implements and bronze vases, 3 km n. of the Mission Bungalow at Tuneri, near a de-

serted village named Neddilu. A barrow yielding iron weapons of excellent workmanship was excavated.

Sewell R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Tungni. See CHAMBAL VALLEY.

Turak-khera, Dt Jabalpur. Microliths (of unspecified nature).

IAR 1960-1.

Turamdih. See DHALBHUM.

Turkhed, Dt Akola. Mesolithic [4.5] site.

IAR 1965-6.

Turbhe (73°29'; 18°0'), Dt Kolaba. Unifacial choppers [4.2] were found at the site, about 9 km s.-s.-e. of MAHAD.

Joshi, R.V., & Bopardikar, B.P., in *Arch. Congress & Seminar*, Nagpur, 1972.

Turuvarur, Dt Chikmagalur. Megalithic [4.17.8] site with a number of stone circles.

Seshadri, M., 1960, *Report on the Jadigenahalli Megalithic Excavations*, Bangalore, p. 4.

Tuskan, Dt Aligarh. PGW [11.14] site.

IAR 1962-3.

Tusra, Dt Balangir. Microliths (of unspecified nature).

IAR 1963-4.

Tuttur, Dt Pudukkottai. Port-holed cists [4.17.9].

AI, 4, 1947-8, p. 307.

Tyaranahalli, Dt Kolar. Megalithic [4.17.8] site with stone circles and cists.

Information from C. Krishnamurthy through A. Sundara.

U

Ubadhi, Dt Mirzapur. Black-and-red Ware [11.63] and NBPW [11.16] site.

IAR 1962-3.

Ubharacheruvu, Dt Chittoor. Early (Lower Palaeolithic [4.2]) and Late Stone Age (Mesolithic [4.5]) site.

IAR 1963-4.

Uchani, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 1, 1, pp. 515-8.

Uchauri, Dt Ghazipur. Sherds of Black-slipped [11.13] Ware and red ware were found. A deep ditch possibly representing the moat for a defensive system was also noticed.

IAR 1965-6.

Uchchimedu, Dt S. Arcot. Red and grey ware (of unspecified nature).

IAR 1965-6.

Uchkerar, Dt Birbhum. Black-and-red Ware [11.6.5] site.

IAR 1971-2.

Udagatti, Dt Dharwar. Megalithic [4.17.8] stone circles and early historical [4.18.11] material. See HANDIGNUR.

IAR 1958-9.

Udaigiri, Dt Vidisha. Late Stone Age (Mesolithic [4.5]) tools were found in the fields adjoining the rock-cut caves.

IAR 1965-6.

Udaipur, Dt Keonjhar. Polished stone celts [4.6.7].

IAR 1958-9.

Udapanahalli, Dt Kolar. Megalithic [4.17.8] site.

IAR 1971-2.

Udayagiri, Dt Nellore. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAR 1970-1.

Udayagiri-Khandagiri (20°16'; 85°47'), Dt Puri, twin hills with one of the earliest groups of the rock-cut monastic caves of the Jains, datable from c. 100 B.C. to the earlier years of the Christian era. The inscriptions found on the walls of some of the caves are practically the only source of knowledge of the existence of a powerful dynasty of the Cetis (Cedis) that came into power in Kalinga some time in the 1st century B.C. or a little earlier. Cave 14 (Hāthigumpha) of the Udayagiri bears on its brow a most important inscription recording the achievements in war and peace of Khāravela of that dynasty. Among other things, the record mentions that he repaired the cyclone-devastated fortification of

Kalinga-nagara [SISUPALGARH], brought back from Magadha the *Jina* of Kalinga that had been taken away by the Nandas and erected a massive structure of stone of the Kumāri hill (Udayagiri) where he also excavated caves for Jaina monks. The structure was evidently meant to provide a place of worship to the resident monks.

At the top of the Udayagiri and on the roof of Cave 14 were noticed traces of a laterite structure, which, being the only one of its kind on the hill, may in all likelihood be identified with the one mentioned in the inscription of Khāravela. Excavation conducted here by D. Mitra of the ASI in 1958 (*IAR 1958-9*, p. 38) uncovered the remains of an apsidal hall measuring 23.77 m in length and 14 m in width. Built of large laterite blocks, the hall has towards the apse-end of the interior a circular wall, probably the base of a platform for installing the object of worship. The platform is raised over the ruins of an oblong structure, evidently the earliest one of the site. The floor of the hall is for the most part paved with laterite slabs though bare rock has been utilized for flooring the n. part of the structure. The occurrence of circular or irregular post-holes in the rock and the pavement at intervals around the structure indicates that it was originally covered by a roof resting on poles. In the n. corner of the hall runs a rock-cut drain covered by laterite slabs designed to take off water from the circular structure.

At a later phase the circular wall was converted into an apsidal structure, the first of its kind in Orissa, by the addition of two oblong walls running roughly parallel to the original apsidal structure. This remodelled structure has openings on three sides. After some time was built towards the base of the original structure an enigmatic semicircular wall of courses of laterite on edge, apparently closing the entrance of the main hall. The last phase of the occupation on the site is marked by a square platform with recessed corners shabbily built of laterite and sandstone blocks over the s.-e. part of the circular wall.

The pottery found in the filling of the floor is red and inadequately fired and rubs off easily. The filling has also yielded a dolerite Neolithic celt with an oblong section.

Another excavation was undertaken in 1961 (*IAR 1961-2*, p. 36) to expose the original features of the hill

face in front of Caves 6 to 9 and Cave 14 which had lost its natural contours due to the modern construction of masonry steps and artificial terraces to hold the debris, as well as to find out if there was any approach road to the all-important Cave 14. The excavation has brought to light an imposing ramp, evidently of Khāravela's authorship, made of large laterite blocks rising from the foot of the hill to the terrace in front of Cave 14. The ramp, over 3 m in width, is supported on either side by retaining walls. Two revetment walls are erected at right angles to the ramp at its top end to support the filling below the terrace in front of Cave 14. From the base of the revetment wall towards the w. end has been recovered the upper part of an exquisite sculpture of a female figurine. Made of coarse sandstone, it represents a *yakṣī* with heavy ornaments and with the hair artistically arranged in two plaits. On grounds of style the sculpture is ascribable to the 1st century B.C.; it is the sole free-standing female figure of the pre-Christian era discovered in the region. An experimental dig in front of Cave 14 has confirmed that the terrace was built over the filling of *kankar* soil which has yielded from the upper level a silver punch-marked coin [3.1] and from the lower level a number of microliths [4.14.1] comprising short blades and lunates.

Mitra, D., 1974, in Ghosh, A., ed., *Jaina Art & Architecture*, 1, New Delhi, pp. 69-84.—S.K. MUKHERJEE

Udayaraya Fort, Dt Nilgiri. Megalithic [4.17.9] site with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Udayarpalayam. See NINNIYUR.

Udaypur, Dt Purulia. Microliths (of unspecified nature). IAR 1959-60.

Udchan, Dt Gulbarga. Chalcolithic [4.14.8] site. *Jour. Karnataka Univ.*, 4, pp. 18-20.

Uddanapalle, Dt Salem. Port-holed cists.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Uddanapalli, Dt Dharmapuri. Dolmenoid and port-hole cists [4.17.9]. IAR 1968-9.

Uddappanahalli, Dt Kolar. Megalithic [4.17.8] site. Information from C. Krishnamurthy through A. Sundara.

Uddatti, Dt Mysore. Megalithic [4.17.8] cist burials. IAR 1961-2.

Uddhamgadhi, Dt Dhule. Tools of Series II (Middle Palaeolithic [4.3]) were found, as also Chalcolithic [4.17.6] pottery and microliths. Of the pottery the most common was the black-painted red ware. Besides common designs there were intersecting arches, arrows, horizontal lines, chequers three horizontal lines with leaf-shaped strokes at the end, stylized human figures and frieze of birds. Associated with the black-on-red ware were the black-and-red, black-and-grey and

burnished grey wares, the last both in thin and thick fabrics.

IAR 1958-9.

Udegollam, Dt Bellary. Early historical [4.18.11] site. IAR 1962-3.

Udepur, Dt Una. Grey ware. IAR 1970-1.

Udhuru, Dt Ranchi. Microliths (of unspecified nature). IAR 1964-5.

Udiripikonka, Dt Anantapur. Late Stone Age (Mesolithic [4.5]) site. IAR 1965-6.

Udrel, Dt Ahmadabad. Microlith-bearing site located on a low sand-dune situated a little away from the river Meshwa and its tributaries. The microliths comprised finished tools in addition to cores and nodules. Besides the microlithic material, bone fragments including teeth of cattle were also obtained. Microlithic blade cores, a few retouched blades, crescents, triangles, points and a small number of scrapers formed the tool content.

IAR 1970-1; 1971-2.

Udsara, Dt Basti. NBPW [11.16] site. IAR 1963-4.

Udumalpet, Dt Coimbatore. Small 'cromlechs'. ASI—AR 1934-5.

Udyavara, Dt S. Kanara. Large quantities of pottery consisting of the Megalithic Black-and-red [11.15] Ware, black polished, plain red and cream wares were obtained from the lower town and sections of the citadel mound known as Balergudda. Remains of a Śiva temple and a citadel of the early historical period were also discovered. Although a chert blade and sherds of a cream ware were found in the sections of the Balergudda, the evidence is too meagre to indicate any Chalcolithic occupation at the site.

IAR 1968-9.

Uganiya, Dt Mysore. Megalithic [4.17.8] site.

Information from C. Krishnamurthy through A. Sundara.

Ugrahu-Hustahkam, Dt Saharanpur. PGW [11.14] site. IAR 1966-7.

Udupanakal W., Dt Anantapur. Neolithic [4.6.8] habitation site. See AKKAMMAKONDA. IAR 1965-6.

Ujhan, Dt Kanpur. NBPW [11.16] site. IAR 1957-8.

Ujina, Dt Gurgaon. PGW [11.14] and early historical [4.18.1] site.

Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.

Ujjain (23°12'; 75°48'), headquarters of the Dt of the same name, situated on the e. bank of the Sipra and well-known as the capital of Avanti, one of the 16 *mahā-janapadas* in the 6th century B.C., and as the seat of a viceroy (*kumāra*) of the Mauryan empire during the rule of Aśoka in the 3rd century B.C., as mentioned in his Dhauili Separate Rock-edict I. It is hallowed traditionally by its association with the *dyotir-līṅga* of

Mahākāla and as one of seven holy cities of India, and remembered through later history and literature, especially the *Meghadūta* of Kālidāsa. It is also known for its legendary association with proverbial Vikramāditya, often identified with Candragupta II (375-414), and his court which included Kālidāsa as one of its nine gems. In the *Periplus of the Erythraean Sea* it is mentioned as Ozene, an important trade centre carrying on trade with Rome. The modern township has shifted from the ancient spot, now known as *Garh-kālikā*, an impressive mound to the n. of the township on the e. bank of the Sipra, marked by a frequently renovated medieval temple of Kālikā, believed to be the patron deity of Kālidāsa. The mound is 10.7 m in height, 1 km in n.-s. length and 900 m in e.-n. width, protected by a mud rampart from the beginning.

The first excavation in the site was conducted by Garde in 1938-9. This brought to light quite a large miscellany of coins, terracottas, beads and pottery, etc., which amply indicated the archaeological potentiality of the site and indicated the need of sustained and systematic work to establish the sequence of cultural equipments and chronology as well as structural remains. The site was therefore subjected to extensive excavations again from 1955 to 1958 by the writer, and limitedly again in 1964 by K. M. Srivastava, on behalf of the ASI (*IAR* 1955-6, p. 19; 1956-7, p. 20; 1957-8, p. 32; 1964-5, p. 18), revealing four successive Pds of occupation called Pds I to IV.

Pd I, dated c. 750 to 500 B.C., is represented by 1.9 m thick strata characterized by pottery comprising the coarse and gritty black-and-red ware [11.6], a bright-red ware having a secondary black slip in discontinuous patches and called the double-slipped ware, unslipped Vesiculated Ware [11.17] and a few sherds of the PGW [11.14] represented only by two sherds in the stratified deposits and a few in the make-up of the ramparts, spindle whorls [6.25] of terracotta, styli [20.5] of bone, arrowheads, spearheads, crowbars, spades, choppers, knives and presumably saws of iron, besides arrowheads of bone. The objects of iron represent fairly early stages in the manufacture of iron objects in India, which may go back to about 1000-1000 B.C. elsewhere.

The habitation was surrounded by a mud-brick fortification in the shape of a pentagon, wider on its n.-w. side than on its s. following the outlines of a convex bend in the course of the Sipra. The fortification, as extant, is 74.67 m wide on the e. side and 197 m on the w. (riverine) side and rises to a maximum height of 13.72 m over the natural Black Cotton Soil [9.1]. It was enclosed by a protective moat, resulting from the earthwork excavation for building up the mud fort, on the e. and s. sides and by the river on the e. and somewhat distantly also on the n., the two arms of the

moat being connected with the river for water supply. To save the mud fort-wall from erosion resulting out of the periodical floods of the river, a unique contraption of a network of hollow rectangular chambers made of neatly cut logs of wood with 23 to 25 cm square cross-section was built alongside the river and following its curved outline and laid as nearly as possible at right angles to the direction of the flow of water from the point of the deepest thrust of the river to a total length of 116 m n.wards to the n.-w. corner. These served as a buffer against the periodical fury of the river. The traditional methods of work for piling up mud are indicated by the iron blade of a spade and iron crowbar and the impressions of two wickerwork baskets embedded in the deposits of the mud rampart.

The excavations led to the exposure of a 7.32 m wide road running through an opening or gateway in the n.-e. corner of the e. wall. The road was built of a veneer of gravel laid with a camber over a clay soling. Though there is evidence for the use of burnt brick during the Pd no vestiges of any structure were met with to suggest its form and shape.

Pd II, represented by the next succeeding deposits, 4.27 m thick, is characterized by the Black-slipped Ware [11.13], black-and-red ware and the Vesiculated Ware, indicating an overlap with the previous Pd and by the NBPW [11.16] and its associates of thick grey ware and unslipped red ware.

The structure of this Pd were built variously of mud, mud brick, stone rubble in clay and burnt brick. A distinctive mud platform, apsidal in shape but of indeterminate use, was reinforced at the edge by three rows of slabs of trap. Mention may also be made of a massive tank measuring 10.36 m × 7.92 m built of burnt brick measuring 76 × 76 × 18 cm, presumably for storage of water, and a long channel of trapezoidal cross-section, traced to a length of 25.9 m with a right-angled bend, possibly for use in conjunction with an industrial workshop which needed a steady supply of water such as the iron industry. Ring-wells [14.15] of terracotta were adjuncts of the habitation and served as soakage wells in this and the subsequent Pd. While a large number of iron objects comprising arrowheads, spearheads, axes, spades, points, chisels, knives, horse-bits, sickles, door-rings, hooks, blades, clamps, sockets, choppers, latches, pivots, bars, tires, borers, rods, door chains and pans with handle indicate the popularity of the metal, the find of lumps of limonite as iron ore, quantities of slag [16.9.4], deposits of calcite and aragonite for use as a flux in the smelting of iron, the remains of an open-type heaped-up furnace for smelting the metal and a blacksmith's forge for the manufacture of finished goods, such as chisels, knives, axes, etc., is significant. A tile-roofed mud house served as a workshop for the

manufacture of stone beads and bone arrowheads, found all over in very large numbers, from large chunks of animal bones. One of the arrowheads found in the neighbourhood was found stained with the blood of a bird, indicating the use.

Terracotta skin-rubbers [18.4], hollow punch-shaped 'hair scratchers', antimony rods of copper and ivory [18.1], hair-pins and combs [18.3] of ivory, styli of bone [20.5], dice [6.7.1] of terracotta and ivory, conical gamesmen of terracotta, hopscotches made from potsherds [6.7.3] and rattles of terracotta, saddle querns, pestles [6.19] and grinding discs of stone, animal and human figurines of terracotta including the figurine of a mother goddess [12.6], sling balls, conical as well as seed-shaped net-sinkers of terracotta [6.16], potters' dabbers of stone and terracotta [16.11], punch-marked coins of copper [3.1] and ivory seals bearing the legends *Gothajasa Tisakasa*, *Pattialasa*, *Tisakasa* respectively, in Prakrit and in the Brāhmī script of the 2nd century B.C. comprise the ensemble of utile objects.

The moat around the fort on the e. side was reduced in width from 46-44 m to 39-32 m, owing apparently to shortage of water, by the construction of a 1-14-m wide revetment wall at its outer edge.

The road through the n.-e. opening varied in width from 7 m to 9-9 m and was marked by six successive levels, necessitated by wear and tear and rising ground level, and the tracks indicated by the ruts at each level in two rows, with the inner ones often overlapping, were invariably 1-75 m in width, a universal gauge of wheeled vehicles of the times.

Pd III, represented by the next supervening 2-44 m thick deposit, had three phases, called respectively A, B, and C and correspondingly dated to 200 B.C. to A.D. 500 (Śuṅga, Śātavāhana, Kushan and Gupta) A.D. 500 to 900 (late Gupta, early Paramāra) and A.D. 900 to 1300 (Paramāra to early Muslim).

The pottery is mostly of a red ware in medium fabric, distinctive bowls of kaolin, impressed with moulded designs of the auspicious symbols, Vesiculated Ware, thick grey ware and the black-grey ware comprise the ceramic complex.

Beads of terracotta, carnelian, amethyst, garnet, chalcedony, jasper, glass, bone and ivory, bangles of terracotta, glass, shell and copper, ear ornaments of terracotta, glass and of discs of shell threaded by a copper wire, skin-rubbers of terracotta, antimony rods of copper or ivory, hair-pins and combs of ivory, pendants of stone or terracotta, including clay bullae [6.4] moulded from Greek or Roman coins, dice of terracotta and ivory, gamesmen of terracotta [6.7.2] truncated at the top, hopscotches fashioned from sherds, terracotta human and animal figurines, the latter of fish, tortoise, horses and elephants, rattles and balls

of terracotta, votive tanks [12.11], has relief sculptures on small slabs of sandstone showing figures of Gaṇeśa, Mahisāsūramardini, Śiva and Viṣṇu, the last of the Gupta period, coins of the Ksatrapas, Kushans and Paramāras, besides a coin mould of the coin of the Antonine (Roman) emperor Augustus Hadrianus (A.D. 117-34), vessels of copper and a tortoise manufactured skilfully with copper wire comprise the diverse miscellany of cultural equipment.

Phase A of the Pd has yielded very interesting evidence for the manufacture of beads of stone on a large scale, especially chalcedony. Rough-dressed specimens of beads were subjected to slow firing in small earthen pots with a closely fitting stopper of chalcedony, and after the rough-outs had acquired an opaque hue in the process they were ground on slabs of sandstone with an abrasive, such as sand, and finished with the piercing of the perforation done with a drill working on one side at a time. Disc-shaped and highly polished ear ornaments were also produced by the same method.

Among the finds of the phase is a sealing engraved on the flat and circular knob of a terracotta casket and reading *Nāgabudhisa pavajitasa*, in Prakrit and Brāhmī letters of the 1st century A.D.

The road through the n.-e. gateway remained in use, in two successive phases of repairs.

Pd IV, represented by an average deposit of 2-13 to 2-74 m and characterized by signs of abandonment of the mound such as debris, as by that time the main habitation had shifted to the n. of the mound as the ground level had risen very high and the ramparts did not afford much protection, is dated to c. 1300 to 1500. Soapstone caskets, beads of terracotta, flimsy ornaments of gold, terracotta animal figurines, bangles and miscellaneous objects of iron comprise the rather unimpressive and dwindling cultural equipment. The pottery types consist of vessels of a dull-red ware and mica-dusted unslipped ware, knife-edged bowls in unslipped red ware, finial-shaped lids, spouted water vessels, flattish pans, and basins with nail-head rims, all in red ware, besides glazed sherds. A few coins of Aurangzeb, Shāh Ālam, Daulat Rao Scindia and Jankoji Rao Scindia found in the deposits of this Pd do not indicate occupation or the real horizon, but periodical visits of the townfolk to the once glorious city of ancient Ujjain.

Sherds of grey ware and PGW, 11.14, were picked up from the Sandipani area of the town (IAR 1968-9, p. 68.)

Banerjee, N.R., 1959, in *Jour. Asiatic Soc.*, 1, 2, pp. 189-96 (for bead-making technique); 1960, in *Indologien Tagung 1959*, Göttingen; 1965, *Iron Age in India*, New Delhi. Garde, M.B., 1940, in *AR Arch. Dept Gwalior State*, V.S. 1995, pp. 13-7—N.R. BANERJEE

Uka Dam, Dt Surat. A flake was recovered about ½ km down stream of the Uka Dam on the right bank of the Tapi.

IAI 1969-70.

Ukeda, Dt Kutch. Historical site. See AJEML.

IAI 1965-6.

Ukhrend, Dt Mainpuri. PGW [11.16] site.

IAI 1961-2.

Ukkaram, Dt Coimbatore. Russet-coated Painted Ware [11.22].

IAI 1962-3.

Ukkirankottai, Dt Tirunelveli. Excavation at the fortified city of Karavandapuram of the Pāndya inscriptions (7th to 9th centuries) revealed a 4 m wide wall made of mud and mud brick and a moat. The walled area had a single-culture deposit.

IAI 1970-1.

Ukkund, Dt Dharwar. Early historical [4.18.11] site.

IAI 1968-9.

Ukkunda, Dt Kolar. Megalithic [4.17.8] site with stone circles.

IAI 1970-1. Also information from C. Krishnamurthy through A. Sundara.

Ukri, Dt Singhbhum. Neolithic [4.6.5] site on the Sanjai, also yielding palaeoliths [4.2] and microliths (of unspecified nature). Dolmenoid structures and menhirs [4.17.4] were also noticed. See SANJAI VALLEY.

IAI 1961-2; 1972-3.

Ulaghpur, Dt Meerut. Early historical [4.18.1] site.

IAI 1969-70.

Ulavapalli, Dt Nellore. Middle Palaeolithic [4.3] and Mesolithic [4.5] site yielding Acheulian handaxes, cores, lancehead and worked flakes.

Aiyappan, A., 1942, *Manley Collection of Stone Age Tools*, Mem. ASI, 68.

Uldan, Dt Banda. Painted rock-shelter [13].

Misra, V.D., 1977, *Some Aspects of India Arch.*, Allahabad, p. 54.

Ulindakonda, Dt Kurnool. Scrapers, flakes and cores of chert.

Foote, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Ullati, Dt Dharmapuri. Megalithic [4.17.9] burial sites.

IAI 1969-70.

Ullenoore, Dt Raichur. Early historical [4.18.11] site.

IAI 1962-3.

Umaj, Dt Dhule. A highly developed bifacial industry [4.2] was found at the end of the upper reaches of the Ranka-nala, a tributary of the Tapti. This industry comprising late Acheulian handaxes, small discoids, scrapers, points and flakes was located in a silty clay mixed with yellowish-brown *kankar*-nodules. A blade-flake-scraper industry of Series II (Middle Palaeolithic [4.3]) seemingly evolved from the earlier industry occurred on the reddish-brown current overlying the first deposit. The next upper deposit contained a microlithic industry mainly on chalcedony, jasper and agate.

IAI 1959-60.

Umajacha-pada, Dt Dhule. Open camp site yielding

large, irregular as well as fluted cores, scrapers, points, etc.

IAI 1960-1.

Uman, Dt Bharuch. Middle Palaeolithic [4.3] and Mesolithic [4.5] site.

IAI 1970-1.

Umand, Dt Chittaurgarh. Black-and-red Ware [11.6.2] site. See DARAULI.

IAI 1956-7.

Umaragarh, Dt Kanpur. NBPW [11.16] site.

IAI 1957-8.

Umar-da-Khurd, Dt Dhule. Lower Palaeolithic [4.2] site.

IAI 1960-1.

Umaria, Dt Jabalpur. Microliths (of unspecified nature).

IAI 1961-2.

Umarkhed, Dt Yeotmal. Middle Palaeolithic [4.3] site.

IAI 1964-5.

Umbar Pada, Dt Dhule. Microlithic associated with ochre-coloured pottery. See DHAMDAI.

IAI 1957-8.

Umbraj, Dt Satara. Middle (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) tools.

IAI 1962-3.

Umbharadi, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAI 1965-6.

Umbharti, Dt Dhule. Late Stone Age (Mesolithic [4.5]) site.

IAI 1963-4.

Umbhre, Dt Dhule. Late Stone Age (Upper Palaeolithic [4.5]) site.

IAI 1963-4.

Umed Khera, Dt Lucknow. NBPW [11.16] site.

IAI 1968-9.

Umednagar, Dt Jodhpur. Microlithic tools on jasper were picked up from a site 3 km from Umednagar. The tools were severely wind-polished, with their retouched edges smoothened.

IAI 1958-9.

Ummadivaram, Dt Kurnool. The site on the Kandleru yielded Series I and II (Lower and Middle Palaeolithic [4.2, 3]) tools and megaliths [4.17.7].

IAI 1959-60.

Umra¹, Dt Bharatpur. PGW [11.14] and black-and-red ware [11.6.3] site.

IAI 1971-2.

Umra², Dt Gurgaon. PGW [11.14] site.

Punia, D.S., 1976, unpublished thesis, Kurukshetra Univ.

Umrada-Khurd, Dt Dhule. Middle Stone Age [4.3] site.

IAI 1961-2.

Umraj, Dt Bijapur. Chalcolithic [4.14.8] habitation site rich in microlithic blades along with fluted cores, Jorwe Ware [11.11] and grey ware similar to that from BRAHMAGIRI.

IAI 1958-9.

Umri¹, Dt Chanda. Lower Palaeolithic [4.2] tools and

Megalithic [4.17.6] stone circles.

IAR 1960-1; 1962-3.

Umri², Dt Junagadh. Red Polished Ware [11.23].

IAR 1957-8.

Umrwa, Dt Bharuch. Late Stone Age (Mesolithic [4.5]) site.

IAR 1969-70.

Un, Dt Dhule. Microliths including cores.

IAR 1958-9.

Una, Dt Junagadh. Site yielding black-and-red pottery and the Red Polished Ware [11.23].

IAR 1955-6.

Unachgeri, Dt Dharwar. Megalithic [4.17.8] urn burials.

IAR 1964-5.

Uncha, Dt Chittaurgarh. Black-and-red Ware [11.6.2] and microliths. See DURIA.

IAR 1957-8.

Unchadhi, Dt Allahabad. Site with traces of fortified habitation with corner towers—a small-scale replica of KAUSAMBI. The pottery was a grey ware with painting. The other types included the bowl with a square, everted or clubbed rim, dish, basin, lid, cooking vessel, some with a marked carination, and dough plate. The pottery was sturdy in fabric and had sometimes painted or incised designs. Some of the types were identical with those associated with the early periods of the defences of KAUSAMBI.

IAR 1959-60.

Unchagaon, Dt Saharanpur. Grey ware, Sunga-Kushan red ware and medieval glazed ware.

IAR 1963-4.

Uncha-Islamabad, Dt Mainpuri. PGW [11.14] and NBPW [11.16] site.

IAR 1961-2.

Uncha Khera, Dt Morena. Mound situated 8 km downstream from the confluence of the Parvati and Chambal rivers yielding a few sherds of the black-on-red ware resembling the Malwa Ware [11.10] and red ware usually painted in white pigment.

IAR 1972-3.

Unchgaon, Dt Gorakhpur. Black-and-red Ware [11.6.3].

IAR 1963-4.

Unchidhanal, Dt Sabar-Kantha. Mesolithic [4.5] site.

IAR 1970-1.

Undakhal river, Dt Mandsaur. (Lower Palaeolithic [4.2]) handaxes and cleavers and occasionally tools of Series II (Middle Palaeolithic [4.3]) on chalcedony.

IAR 1959-60.

Undala, Dt Chittaurgarh. Microliths, black-and-red ware [11.6.2] and associated pottery.

IAR 1956-7.

Undar, Dt Panch Mahals. Late Stone Age (Mesolithic [4.5]) site in the Annas valley.

IAR 1968-9.

Undel, Dt Indore. Microliths in association with the black-and-red, black-and-cream and grey wares.

IAR 1958-9.

Undra, Dt Bharatpur. PGW [11.14] site.

IAR 1971-2.

Ungallur, Dt Palghat. Megalithic [4.17.10] site.

IAR 1968-9.

Unhel, Dt Ujjain. Historical site (of unspecified nature).

IAR 1960-1.

Unkli, Dt Dharwar. Early historical [4.18.11] site.

IAR 1960-1.

Untavad, Dt Dhule. Chalcolithic [4.14.8] habitation site.

IAR 1966-7.

Upalai, Dt Gulbarga. Megalithic [4.17.8] site.

AR Hyderabad Dept of Arch., 1933-4, p. 7.

Uparadaha, Dt Allahabad. Early historical [4.18.1] pottery.

IAR 1961-2.

Uparkot, Dt Bhavnagar. Early historical [4.18.2] site.

IAR 1967-8.

Uparpina, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1966-7.

Uparpind, Dt Dhule. Chalcolithic [4.14.6] habitation site.

IAR 1966-7.

Uparson, Dt Bankura. Tools of Series I (Lower Palaeolithic [4.2]).

IAR 1959-60.

Upaspur, Dt Kolar. Megalithic [4.17.8] site with circles.

IAR 1970-1.

Upayara, Dt Mysore. Megalithic [4.17.8] cairn circles.

IAR 1962-3.

Uplana, Dt Kurukshetra. Late Harappa [4.10] site comparable with MITATHAL II B.

Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 125.

Uppal, Dt Hyderabad. Neolithic [4.6.8] and Megalithic [4.17.7] site.

Sreenivasachar, P., 1963, *Arch. Bulletin*, 11, Andhra Pradesh Government Arch. Series, Hyderabad, p. 2.

Uppalapadu. See SRISAILAM.

Upparahalli, Dt Kolar. Megalithic [4.17.8] site with stone circles and cists.

IAR 1971-2.

Upparapatti, Dt Dharmapuri. Megalithic [4.17.9] and early historical [4.18.12] site.

IAR 1966-7.

Upper-Dutta-Buldi, Dt Parbhani. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1970-1.

Uppinahalli, Dt Mysore. Megalithic [4.17.8] habitation site.

IAR 1963-4.

Uppugunduru, Dt Prakasam. Early historical site yielding Black-and-red Ware [11.15.3], Red Polished Ware [11.23] and Rouletted Ware [11.21].

IAR 1959-60.

Uppugunduru, Dt Guntur. Large site yielding a number

of Buddhist antiquities and a Prakrit Brāhmi [20.4.2] inscription of the Ikṣvāku ruler Virapurisadatta.

IAR 1959-60.

Uppraura, Dt Allahabad. Grey ware with painting of the same type as KAUSĀMBI.

IAR 1959-60.

Upsal, Dt Valsad. Early, Middle (Lower, Middle Palaeolithic [4.2, 3]) and Late Stone Age (Mesolithic [4.5]) tools.

IAR 1968-9.

Uraiyur (10°45'; 78°40'), Dt Tiruchchirappalli, a suburb of Tiruchchirappalli town, one of the famous cities of ancient Tamil Nadu situated on the s. bank of the Kaveri. It was the capital of the early Coḷas of the Sangam period, known by many names such as Uraiyur, Urandai, Koli or Koliyūr, Urāgapura, etc. The *Periplus* of the 1st century A.D. refers to the place as Argaru and calls it the capital of an inland district. Ptolemy's Orthura regia Sornati has been identified with the Uraiyur region of the Coḷas. Sangam works like the *Ahanānūra* and the *Puranānūru* contain copious references to this city and its political, commercial and religious importance, wherefrom we learn that it was a fortified city having a prosperous urban life. From ancient times Uraiyur has been a centre of spinning and weaving of cotton and also perhaps of silk. The *Periplus* mentions it as a great centre of trade in fine cotton stuff. One of the poems in the *Ahanānūra* vividly describes the famous Urandai festival whereas another poem mentions it as a place of the functioning of a famous assembly (*sabhā*) known for its justice. In the 7th and 8th centuries the city was the bone of contention between the Pallavas and the Pāṇdyas. From about the beginning of the 10th century it was part of the later Coḷa empire. In the 13th century the city fell into the hands of the Pāṇdyas. Māravarman Sundara Pāṇḍya I (1216-39) invaded the Coḷa territory and caused extensive destruction to the city. After the decline of the Coḷas Uraiyur practically lost its political importance and later on got merged with the larger town of Tiruchchirappalli.

As a suburb of a growing city extensive vacant sites are not available for excavation. In the available space of five localities some 12 trenches were sunk (IAR-1964-5, p. 25; 1965-6, p. 26; 1966-7, p. 30; 1967-8, p. 30). The localities are: (1) open playground near the police station, (2) near the Selliachi Amman temple and (3) n.-e. corner of Uraiyur water tank, (4) the ground near the Old Choultry and (5) near the Nada factory site. The excavations were conducted by Univ. of Madras between 1964 and 1968.

The excavations have yielded occupational deposits and cultural material belonging broadly to two Pds: Pd I belonging to the first three or four centuries A.D., and Pd II to later times. Pd II can be subdivided into two phases

A and B; the former can be roughly datable to the 5th to 10th centuries and the latter can be regarded as late medieval. The division is mainly based on the occurrence of fairly datable pottery types. In Pd I certain known pottery types occur throughout such as the Black-and-red Ware [11.15.3] and its associated black ware, the Russet-coated Painted Ware [11.22] and the Rouletted Ware [11.21]. The occurrence of the last two types would clearly indicate a date near the 1st century A.D. The find of a number of sherds with Brāhmi inscriptions points to more or less the same period. A long inscription mentions Antaanān of Muulaanpedu, probably meaning the Brāhmaṇa of Mulanpedu. But the other inscriptions are short and fragmentary. On palaeographical grounds and associated finds they are datable to first three centuries.

An important structure of Pd I is a brick-built dyeing vat found at the depth of 2-39 m in a trench in locality 2. It consists of one square and another rectangular chamber laid diagonally opposite each other. The square cistern measures internally 68 cm and the rectangular one 48×35 cm both having paved flooring. The bricks measure 43×23×7.6 cm. This structure has close similarity to a dyeing vat excavated at ARIKAMEDU. It is interesting to note that from ancient times to the present day Uraiyur has been a leading centre of handloom industry in s. India.

In another trench in locality 1 an interesting array of post-holes on a peculiar plan, probably meant to erect an altar for some ritualistic purposes, had been laid bare. In another trench in the same locality successive layers of rammed clay flooring laid one above the other and foundation level of a building laid with rubble, brickbats and pottery pieces have been encountered. They give us an idea of the pattern of house construction and the material used.

A large number of beads of coloured glass, shell, terracotta and semiprecious stones have been found in this Pd, a collared bead in soapstone being noteworthy. Some bone tools like points and needles [6.15] evidently used in the weaving industry or as styli [20.5] have also been recovered.

In some localities vestiges of continuous occupation of Pd II have been found. In these deposits two phases can be distinguished, A, roughly from the 5th to 10th centuries, and B, which is later. In the former the survival of certain pottery traditions like the bright-red-slipped ware can be detected, while the latter has coarse red ware and vessels of different utilitarian characters. Some Celadon Ware [11.25] pieces are also present. Among the minor antiquities in this Pd are glass beads and bangles of black glass, besides those of semiprecious stones. Terracotta toys such as human figurines, gamesman [6.7.2] like dice [6.7.1], ear ornaments,

bangles, rings, etc., have been recovered.

Thus the excavations have yielded cultural vestiges datable to the early centuries of the Christian era and subsequent times in the form of private houses and buildings, objects of daily use by the common people like pots and pans, bangles, metal objects like iron knife, hooks, etc., and terracotta toys. They compare well with those of similar early historical sites like KĀVERI-PATTINAM, ARIKAMEDU and KANCHIPURAM in Tamil Nadu. The presence of a number of sherds with Tamil inscriptions in Brāhmi letters is of special importance.

—K. V. RAMAN

Urakkudi, Dt Madurai. Megalithic [4.17.9] site with terracotta urns.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Uravakonda hill, Dt Anantapur. Neolithic site yielding celts, corn-crushers and milling stones.

Foot, R.B., *Indian Prehistoric & Protohistoric Antiquities*, Madras. IAR 1965-6.

Urchan, Dt Gulbarga. Neoliths [4.6.9], microliths, parallel-sided blades and sherds of Jorwe Ware [11.11], Red Polished Ware [11.23], Black-and-red Ware [11.15.3] and Russet-coated Painted Ware [11.22].

IAR 1960-1.

Ujungigarhwa, Dt Palamau. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1971-2.

Urakudpar, Dt Chanda. Lower Palaeolithic [4.2] site.

IAR 1960-1.

Urlana Kalan, Dt Karnal. Late Harappa site comparable with MITATHAL II B. See YAMUNA RIVER.

Suraj Bhan, 1975, *Excavation at Mitathal & Other Explorations in the Sutlej-Yamuna Divide*, Kurukshetra, p. 125.

Urugurki, Dt Kolar. Megalithic [4.17.8] site with stone circles with and without rubble.

Information from C. Krishnamurthy through A. Sundara.

Uruva, Dt Gorakhpur. NBPW [11.16] site.

IAR 1963-4.

Usarain, Dt Gorakhpur. Black-and-red Ware [11.6.3].

IAR 1963-4.

Usegaon, Dt Chanda. Lower Palaeolithic [4.2] and Microlithic (of unspecified nature) site.

IAR 1960-1.

Ushkar, **Ushkura** (34°12'; 74°22'), Dt Baramulla, the name being a corruption of Huviskapura founded by the Kushan king Huviṣka. A *stūpa*, now in ruins, ascribed to the 8th century on the analogy of the style of the one at PARASPORA (Parihāsapūra), seems to have been built over an older structure which might have belonged to Kushan times, as indicated by terracotta heads and fragmentary images with Gandhāra influence.

Kak, R.C., 1933, *Ancient Monuments of Kashmir*, London, pp. 152-5. Mitra, D., 1971, *Buddhist Monuments*, Calcutta, p. 112.

Usmanpur (Qila Mewi) Dt Bulandshahr. Grey ware.

IAR 1964-5.

Usoor, Dt Bastar. Early and Middle Stone Age (Lower and Middle and Palaeolithic [4.2, 3]) tools.

Jha, V.D., 1976, in *Arch. Congress & Seminar, 1972*, Kurukshetra.

Usrala, Dt Chanda. Pebble tools [4.2] comprising choppers and early Acheulian handaxes.

IAR 1962-3.

Uthamanallur, Dt Chingleput. Megalithic [4.17.9] site. See PERAMBUR.

ASI—AR 1908-9, p. 92.

Utnur, Dt Mahbubnagar, located in the centre of a small outlier of Dharwar rocks, with an ash-mound [14.3] about 60 m square and 1 to 3 m high, situated to the n.-w. of the village, first reported in the *Jour. Hyderabad Geological Survey*, 3, 1. From the disturbed parts on the surface can be obtained potsherds of the Black-and-red Ware [11.15.3], Russet-coated Painted Ware [11.22] and burnished and unburnished red wares of the early historical period. Three trenches were laid here by Allchin in 1957 (Allchin, 1963) in order to ascertain the nature and period of the accumulation of the scoriaceous ash: UTN-I, about 30 m away n.-e. of the mound in the plains of the site with three subsidiary trenches, UTN-II, UTN-IN and UTN-IP; UTN-II, in the s.-e. part of the mound extending into the site at the ground level; and UTN-III, in the n. part of the mound. In UTN-I, UTN-IN, UTN-IL and UTN-IP the cultural debris is divisible almost uniformly into 12 layers, in UTN-II 9 layers and UTN-III 8 layers. In UTN-I, UTN-IN, UTN-IP and UTN-IL can be distinguished five layers (1, 2, 4, 6, 8, and 10) of scoriaceous or soft friable ash of cow-dung alternated by layers (3, 5, 7, 11, 12) of compact brown clayey soil with dark-brown surface, containing remains of fenced stockades here and there within which were impressions of cattle-hoofs. In layer 2 are indications of an ash wall. The topmost layer is the surface humus and the lowest natural soil is red *murram*. In UTN-II and UTN-III have been encountered only three layers of scoriaceous ash alternated by layers of similar brown clayey soil but UTN-III is without of account the constructional and burning activities as well as the surface accumulations five Pds have been recognized, Pd V being of the Iron Age [4.16] and early historical [4.18.10] cultures.

In Pd I the presence of a trench with a shallow bank on the inner side possibly supporting thorn-fencing, about 4.50 to 3.90 m wide and 30 cm deep, around the perimeter of an area about 60 m square identified as cattle-pen and imprints of cattle-hoofs are noteworthy, besides potsherds and cattle bones in I A. At places are hard vitreous patches and indications of burning and levelling (I B), double line of post-holes implying a stockade containing deposit of cow-dung burnt *in situ* and a pit containing an infant burial (I C). In Pd II is found another stockade, ash accumulation, potsherds,

stone tools, cattle bones, etc. Particularly noteworthy are: the remains of similar stockades with nodules of stones supporting the fence; human occupation and indications of burning of cow-dung in different times in Pd III; levelling and thick accumulation of vitreous ash partly heaped up along the edge forming 'ash wall' in Pd IV; and indication of abandonment of the site and later occupation of the site by people of the early Iron Age and early historical cultures for a short period suggested by scatterings of the pottery of the cultures in Pd V. In all there appears to have been at least five deliberate major burnings of the stockades together with the heavy accumulations of cow-dung for the successive preparation of the site for new cow-pens.

While no human habitational remains occur in the ashy layers, objects such as Neolithic grey-ware potsherds [11.1.5], charcoal and cattle bones have been found outside the stockades in alternate layers belonging to Pds I to IV. From layer I and in the pits made by rodents, etc., in layer 2 have been obtained the Black-and-red Ware and Russet-coated Painted Ware of the early Iron Age and early historical cultures.

The grey pottery, essentially early Neolithic, is in various shades of colours: grey, black, buff, chocolate-red and brown; it is rusticated and burnished and is mostly handmade. Some have post-firing red-ochre painting at the edge of the vessel, while a few have pre-firing purple painting on the body. A few have incised decorative designs as well. The types are limited: the vase with outcurving or flaring rim; shallow and deep bowl; and dish-on-stand. Stone tools made on chert and jasper are parallel-sided blades, backed blades, lunates, fluted cores and flakes. There are a very few axes of grey gneiss or a dark-green hornblende schist mostly pecked and ground. Tools such as axes, hammers and rubbers are mostly from the surface.

The pottery of the early Iron Age and early historical

age pd V, is mostly wheel-made in bright or dull-red ware, the types being: the deep bowl with vertical side; shallow dish; tulip-shaped bowl in black-and-red ware; cup with flat base; vase; basin with collared rim; and lid with flanged waist.

In layer 9 of UTN-I the remains of a burial of a child, probably newly born, include only ribs and one humerus, the skull being completely crushed. The animal remains [15.1] are largely of the cattle and a few of the deer and goat. A bone in UTN-I is fashioned into a chisel-like blade. A charcoal sample from layer IIa of UTN-I is ^{14}C dated to 2295 ± 155 B.C. Relatively the end of Pd IV is assigned to c. 1250 B.C. It is inferred that ash-mounds of the Raichur *doab* are of the early Neolithic cattle-keepers who periodically deliberately burnt their cattle-pens containing thick accumulation of cow-dung in a ritualistic way for the construction of new ones. It is thought that this tradition survives in the ritualistic burning during Holi and Diwali festivals.

Allchin, F.R., 1963, *Neolithic Cattle-keepers of S. India*. Cambridge.—A. SUNDARA

Utrala, Dt Mainpuri. PGW [11.14] site.

IAI 1960-1.

Utrawan, Dt Lucknow. NBPW [11.16] site.

IAI 1968-9.

Utsara, Dt Bulandshahr. PGW [11.14] and plain grey ware.

IAI 1959-60.

Uttangiri, Dt Salem. Pointed-butt polished stone axes [4.6.10].

AI, 4, 1947-8, p. 296.

Uttiranmerur, Dt Chingleput. Megalithic [4.17.9] site with two large 'cromlechs'.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Uttukkottai, Dt Chingleput. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3]) tools.

IAI 1963-4.

V

Vachhoda, Dt Junagadh. Red Polished Ware [11.23].

IAR 1957-8.

Vadaamanipalle, Dt Cuddapah. Early, Middle (Lower, Middle Palaeolithic [4.2, 3]) and Late Stone Age (Mesolithic [4.5]) tools.

IAR 1964-5.

Vadagacheri, Dt N. Arcot. Lower Palaeolithic [4.2] site.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Vadagarai, Dt Madurai. Funerary urns and Megalithic pottery [11.15.3].

ASI-AR 1936-7.

Vadakhunta, Dt Bharuch. Middle Palaeolithic [4.3] and Mesolithic [4.5] site.

IAR 1968-9.

Vadakkethara, Dt Trichur. Dolmenoid cists without port-holes [4.17.10].

IAR 1968-9.

Vadaku Vallanadu, Dt Tirunelveli. Megalithic [4.17.9] site.

ASI-AR 1902-3.

Vadala-Bhittewadh, Dt Amritsar. Grey ware and Black-slipped Ware [11.13].

IAR 1962-3.

Vadala-Garantian Sahari, Dt Gurdaspur. Black-slipped [11.13] Ware and black-and-red [11.6] and grey wares.

IAR 1961-2.

Vadala-Viram, Dt Amritsar. Grey ware and Black-slipped Ware [11.13].

IAR 1962-3.

Vadali-Dogran, Dt Amritsar. Remains of the early historical period [4.18.1] of c. 1st-2nd century A.D. including black-painted red ware and Red Polished Ware [11.23].

IAR 1963-4.

Vadamadurai (10°25'; 78°00'), Dt Chingleput, in the Korttalayar valley, considered to be valuable for the dating of the Boulder Conglomerate underlying detrital laterite [9.6]. The stone tools from the site were divided by Krishnaswami, 1947, pp. 32-3, into three groups based on patination and typology. The earliest, which is unlateritized, with heavy cream-coloured cortex patination and rolled and is considered to be pre-lateritic and coeval with the Boulder Conglomerate, is divided into the Abbevillian and Early Acheulian [4.2]. The second group is stained red through contact with the laterite

gravel laid on the top of the Conglomerate. Definite typological advance is also noticed over the first group by the handaxes showing mid-Acheulian, flatter and step-flaked types, pear-shaped and ovate forms being common. The flakes do not show any faceted platform. The third group has no laterite staining and only a little patination. The handaxes have an advanced Acheulian finish involving wood-technique; cleavers are very few. There are flat cores with prepared platform. The flakes do not show any faceted platform. Side scrapers exist on such flakes. F.E. Zeuner had the occasion of examining the material of the first group and believed that heavy leaching had taken place on the cortex of the tools of this group.

In recent years the site has been excavated by K.D. Banerjee (*IAR 1964-5*, p. 20; *1966-7*, p. 20). The stratigraphy of the site, from bottom upwards, reveals the Sriperumbudur shale (bed rock); Satyavedu sandstone boulders and gravels in a matrix of sand and clay, with a few extremely rolled early Acheulian tools at the bottom of the deposit; gravel of detrital laterite; and quartzite boulders. Acheulian tools in manufacturing stages are found in a fresh condition in this deposit; the lateritic clay also contains tools identical with those noted in the underlying deposit. The site shows, according to the excavator, mainly the Acheulian industry, with a redeposited earlier Acheulian one. The area deserves further excavation as it is vital for Stone Age study.

de Terra H., and Paterson, T.T., 1939, *Studies on the Ice Age in India & Associated Human Remains*, Washington; Krishnaswami, V.D., 1947, in *AI*, 3. Paterson, T.T., 1938, in *Indian Academy of Science*, Madras Meeting; 1940, in *Nature*, 146, pp. 12-15, 49-52. — K.V. SOUNDARA RAJAN

Vadamandu, Dt Guntur. Neolithic [4.6.8] adze.

IAR 1957-8.

Vadapalanji, Dt Madurai. Mound with remains of ancient habitation (of unspecified nature).

IAR 1957-8.

Vadasada, Dt Rajkot. Harappa [4.9] site. See DUMIANA.

IAR 1958-9.

Vadbara, Dt Dhule. Microliths (of unspecified nature).

IAR 1961-2.

Vaddarasa, Dt s. Kanara. Megalithic [4.17.8] site with pot burials.

Jour. Karnataka Univ., 10, 1974, pp. 5-6.

Vade, Dt Pune. Microlithic (of unspecified nature) site.
IAR 1965-6.

Vadgam¹, Dt Kaira. Harappa [4.9] site.
IAR 1972-3.

Vadgam², Dt Surendranagar. Harappa Ware [11.3] and black-and-red ware.
IAR 1964-5.

Vadgaon¹, Dt Belgaum. Russet-coated Painted Ware [11.22].

AI, 4, 1947-8, p. 310.

Vadgaon², Dt Osmanabad. A 10 m, high mound representing a brick *stupa* of the early historical period.

IAR 1957-8.

Vadgaon-Madhavapur (15°52'; 74°34'), Dt Belgaum, a suburb of Belgaum town, an open intact site of the early historical period, about 40 hectares in area, discovered in 1945 by the Kannada Res. Inst. A hexagonal stone pillar inscription on Brāhmī script of c. 1st century B.C. from this site records the performance of *vajapeya* and other sacrifices by a Brāhmaṇa of Kāśyapa-gotra. Brick structural remains, tiles, pottery of red ware and Black-and-red Ware [11.15.3] typical of the Sātavāhana period were exposed in pits dug by the local people. The Exploration by the writer in 1964 produced two potin coins, one having the legend in Brāhmī as *Siri Satakarni*.

Excavations from 1972 to 1977 by the Dept. of Ancient Indian Hist. and Epigraphy and the Inst. of the Karnatak Univ. (IAR 1972-3) have revealed that the cultural debris is about 4-25 m thick at the maximum overlying the natural soil of disintegrated laterite, divisible into nine layers that resolve into three phases of a single culture with brick structures, pottery, beads, terracotta figurines, coins, iron objects, etc. The three phases, from top downwards, are respectively dated to c. middle of the 1st to the 2nd century A.D., c. 2nd century B.C. to the middle of the 1st century A.D. and c. 3rd century B.C. on the basis of datable coins and the Red Polished Ware [11.23].

Among the brick structures, all from the uppermost phase, the following are worthy of note: a spacious building consisting of a hall with a soak-pit; a room with granary, etc., and an apsidal structure both perhaps of religious use; an extensive well-built floor of a large building that yielded about 50 copper coins having the Ujjain symbol, ivory pawns, etc., probably of public use; and residential buildings each consisting of two rooms and in one case a veranda also provided with granaries and water-wells. Excepting patches of rammed floors in the middle phase, no structural remains have been found in the remaining phases.

Besides pottery, beads from all the phases, terracotta human figures and of the horse, elephant, lion, bull and bird, circular plaques having floral designs and legendary episodes, etc., a stamped pottery piece containing a man driving an elephant, a few punch-marked coins

[3.1] and potin coins having the legends *Gotamiputasa*, *Vilivayakurasa*, *Vasithiputasa*, and *Mahārathisa* around bow and arrow on one side, and hill with river as well as tree within railing, a Roman coin, fragments of sprinklers in the Red Polished Ware and vessels in the Russet-coated Painted Ware [11.22] in the uppermost phase are of importance. The red ware and highly polished Black-and-red Ware are respectively predominant in uppermost and the earliest phases, the two fabrics occurring more or less in equal proportions in the middle.

—A. SUNDARA

Vadhoda, Dt Dhule. Series II (Middle Palaeolithic [4.3]) tools were found together with blades, points, scrapers, awls, etc., belonging to Series III (Mesolithic [4.5]). Microliths and sometimes neoliths were found in association with the black-on-red painted pottery. Alongside was a coarse grey ware, similar to that from the Chalcolithic levels at BRAHMAGIRI and BAHAL.

IAR 1957-8.

Vadia, Dt Rajkot. Early historical [4.18.2] site.
IAR 1958-9.

Vadi Tarsang, Dt Panch Mahals. Late Stone Age (Mesolithic [4.5]) and microlithic (of unspecified nature) site.

IAR 1971-2. Arch. Congress & Seminar 1972, Kurukshetra, 1976.

Vadiya Valo Dharo, Dt Bhavnagar. Harappa [4.9] and early historical [4.18.2] site.

IAR 1971-2.

Vadiyur, Dt Chingleput. Early (Lower Palaeolithic [4.2]) and Late Stone Age (Mesolithic [4.5]) site.

IAR 1964-5.

Vadjakhan, Dt Dhule. Open camp site yielding large, irregular as well as fluted cores, blades, scrapers, points, etc.

IAR 1960-1.

Vadnagar (23°48'; 72°36'), Dt Mahesana. Nagara, Anartapura and Vṛddhanagara are some of the names by which this town was known in the past. Excavation revealed a continuous sequence of three cultural periods: Pd I (c. 100-200) was characterized by the predominance of a very crude pottery, also noticed at VADODARA, TIMBARVA and AMRELI. Pd II (c. 200-600) had Red Polished Ware [11.23] in large quantities associated with a painted pottery with black designs on a bright-red slip [cf. VASAI]. Pd III (c. 600-1000) yielded a distinctive coarse red-slipped ware painted with black designs on a white background. This ware also occurs at VADODARA and TIMBARVA.

IAR 1953-4; 1966-7. Subbarao, B., & Mehta, R.N., 1955, in *Jour. M.S. Univ. Baroda*, 4, 1.

Vadner, Dt Ahmadnagar. Lower Palaeolithic [4.2] site.
IAR 1959-60.

Vadner-Budruk, Dt Ahmadnagar. Tools of Series II (Middle Palaeolithic [4.3]) and microliths and sherds of thick grey ware were collected. Early historical pottery

was characterized by black-and-red and red wares.

IAI 1960-1.

Vadodara (22°17'; 73°15'), headquarters of the Dt of the same name, on the Vishvamitri, almost entirely built upon prehistoric and historical remains, making extensive excavation difficult. Stray discoveries of copper-plates and sculptures here and there and above all a cache of invaluable Jaina bronzes at the adjoining area of AKOTA (Shah, 1969) however proved the antiquity of the site.

A few trenches, limited by the availability of open space, were laid by Subbarao in 1951-52 (Subbarao, 1953) at AKOTA, ancient Ankottaka, and the Medical College area at Vadodara, probably part of the site of ancient Vadapadraka. As a correlation of the data from different trenches the following sequence has been arrived at: (1) Microlithic (it is not clear if this culture was related to the Mesolithic [4.5] or to the Chalcolithic [4.14], but it is more likely that it is affiliated to the former which is widespread in Gujarat and is unassociated with agriculture and domestication of animals; (2) early historical, with the Red Polished Ware [11.23] found at many other sites in Gujarat and elsewhere and with well-built baked-brick houses including a huge brick structure, Roman bronze vessels, terracotta seals in Graeco-Roman style, and early Ksatrapa coins; (3) late historical, following a heavy flood, when the nucleus of Vadapadraka was founded but Ankottaka remained under habitation. Occupation continued down to Rasttrakuta, Calukya and still later times through Muslim occupation and recent times.

Of special significance is the find of the Red Polished Ware, an adaptation of the Mediterranean Samian Ware, of the beginning of the Christian era, with a widespread distribution. Also important are the Jaina bronzes from AKOTA of the 6th-7th to 10th-11th centuries, which were perhaps hurriedly buried during the invasions that followed.

Shah, U.P., 1959, *Akota Bronzes*, Bombay. Subbarao, B., 1953, *Baroda Through the Ages*, Baroda—A. GHOSH

Vadokkuppetai, Dt Chingleput. Megalithic [4.17.9] site.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Vadrahalli, Dt Kolar. Megalithic [4.17.8] stone circles.

IAI 1970-1.

Vadukanathapuram, Dt Madurai. Megalithic [4.17.9] site with sepulchral urns.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Vagampalayam, Dt Coimbatore. Megalithic [4.17.9] cairn circles.

IAI 1962-3.

Vagapatti, Dt Padukkottai. Megalithic [4.17.9] site.

Manual of Padukkottai State, 1944, 1, 1, pp. 515-8.

Vagech. See PURNA VALLEY.

Vaghale and Balamrapada, Dt Dhule. Lower Palaeolithic [4.2] site.

IAI 1960-1.

Vaghoda, Dt Dhule. Late Palaeolithic ([Upper Palaeolithic? [4.5]) tools.

IAI 1960-1.

Vaghunde-Khurd, Dt Ahmadnagar. Tools of Series II (Middle Palaeolithic [4.3]), microliths (of unspecified nature) and thick grey sherds were collected. Early historical [4.18.9] pottery was characterized by black-and-red and red wares.

Vagimadugu, Dt Nellore. Megalithic [4.17.7] site with a large number of dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Vagimadugu, Dt Prakasam. Megalithic [4.17.7] site.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Vaglud, Dt Nasik. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAI 1965-6.

Vaguthampalayam, Dt Coimbatore. Megalithic [4.17.9] cairn circles.

IAI 1962-3.

Vahaja, Dt Bharatpur. Kushan red ware.

IAI 1970-1.

Vaharvo (21°50'; 71°45'), Dt Bhavnagar. Post-Harappa [4.10] site corresponding to RANGPUR II C.

IAI 1960-1. AI, 18 & 19, 1962 & 1963, p. 207.

Vahipara, Dt Palamau. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAI 1971-2.

Vaidyapur. See BAIDYAPUR.

Vaigai river, Dt Madurai. Mounds with remains of ancient habitation were noticed Kochchadai, Tenur and Playanattam.

IAI 1957-8.

Vaikuntapuram, Dt Guntur. Rouletted Ware [11.21] was picked up at Vaikuntapuram, 29 km n. of Guntur. The site also yielded Black-and-red Ware [11.15] and black-slipped and red wares of the early historical period [4.18.10].

IAI 1960-1.

Vainagadha, Dt Ballia. Black-and-red Ware [11.6.3].

IAI 1963-4.

Vaindana, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) site. Chalcolithic [4.14.7] habitation and burial remains were also found.

IAI 1961-2.

Vaisali, Basarh (25°58'; 80°11'), District Vaisali, supposedly founded by Visāla of the Ikṣvāku lineage, the capital of the Republic of the Licchavis, a branch of the Vṛjī clan at the time of Buddha who visited the place more than once. It was annexed by Ajātasatru of Magadha after the death of Buddha. Pre-Mahāvira Jainism is said to have penetrated here and Mahāvira

was born near the place. Many spots here were connected with Buddha and Aśoka raised one of his (uninscribed) pillars near a lake associated with Buddha. The main ruins are represented by a prominent fort over 500 × 240 m known as Raja-Bisal-ka-Garh, identified by A. Cunningham as Vaiśālī (ASI—AR, 1, p. 55), though ruins are scattered well outside the fort as well.

The fort was excavated by T. Bloch in 1903-4 (ASI—AR 1903-4, p. 81) and D.B. Spooner in 1913-4 (*ibid.*, 1913-4, p. 98). While the lower levels were not reached, a vast number of Gupta seals [3.2] and terracotta, and some pre-Gupta ones too, including two Hellenistic heads, and punch-marked coins [3.1], were found. The buildings were however poor.

Controlled excavation was undertaken here in 1950 by the Vaisali Sangha under the direction of Krishna Deva assisted by Misra (Krishna and Mishra, 1961) and between 1958 and 1962 by A.S. Altekar on behalf of the K.P. Jayaswal Res. Inst. (Sinha and Roy, 1969). The excavations included the areas of Kharauna Pokhar, Raja-Bisal-ka-Garh, Chakramdas, Lalpura, Kolhua and Virpur. Kharauna Pokhar has been identified with the ancient Abhiseka-puskarini with whose waters all the rājās of the republic were consecrated. It had a surrounding wall with concrete platforms, with as many as six occupational levels. It has been suggested that in Pd III (150 B.C. to A.D. 100) there were rooms for guards with places for quivers in specially made holes.

Another important discovery was a *stūpa*, originally of mud but later on encased in brick, which has been taken to be the one built over the corporeal relics of the Buddha by the Licchavis. The *stūpa* had been opened up at an early date and renovated and enlarged more than once, being buttressed with brick and brickbats in the 1st century A.D. A soapstone casket [18.2] containing ashy earth, a small conch-shell, two small glass beads, a bit of gold leaf and a copper punch-marked coin are the other finds.

The Garh area shows that it was under occupation from at least 500 B.C., as in the lowest layers black-and-red ware [11.6.4] is found with the NBPW [11.16]. The discovery of a few sherds of degenerate grey ware with painting associated with the mud rampart has no chronological significance. The earliest traces of structural remains belong to 350-150 B.C., corresponding roughly to the Maurya period, when the mud rampart was erected; in the Śunga period it was strengthened with courses of mud brick. Afterwards a massive rampart about 21 m in width at the base and 6.4 m in width at the extant top and about 4 m in extant height was made of rammed earth. Later in the pre-Gupta period a brick rampart, 2.4 m wide, was constructed with military barracks made of brick 37.2 × 23.3 × 5 cm in dimensions.

The portable objects found at Vaiśālī are rich and varied and consist of: coins ranging from punch-marked and cast to those of Muslim rulers; terracotta human and animal figures including *nāgas* [17.1], toy carts [6.7.4], beads, pendants, balls, dabbers [16.11], moulds [16.10], skin-rubbers [18.4], seals and sealings; beads of semi-precious stones; and pottery represented by the NEPW of various hues, black ware resembling the NBPW, medium to coarse grey ware and red ware of shapes consistent with the period of the occupation of the site.

Krishna Deva and Mishra, V., 1961, *Vaiśālī Excavations 1950*, Vaisali, Mishra, Y., & Roy, S.R., 1964, *Guide to Vaiśālī and the Vaiśālī Museum*, Vaisali, Sinha, B.P., & Roy, S.R., 1969, *Vaiśālī Excavations 1958-62*, Patna.—B.P. SINHA

Vaithur, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 1, 1, pp. 515-8.

Vajdara, Dt Dhule. Artefacts ascribable to the post-Middle Stone Age (Middle Palaeolithic [4.3]) and pre-Late Stone Age (Mesolithic [4.5]) were found.

IAR 1964-5.

Vajewada, Dt Ahmadnagar. Chalcolithic [4.14.6] site.

IAR 1960-1.

Vajpur, Dt Dhule. Tools of Series II (Middle Palaeolithic [4.3]) were found on the TAPTI.

IAI 1958-9.

Vajragiri, Dt Cuttack. Buddhist-site with images and remnants of brick structures.

IAI 1959-60.

Vajrakarur, Dt Anantapur. Neolithic [4.6.8] habitation site with celts, hammer stones, etc. See AKKAM-MAKONDA.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras. IAR 1965-6.

Vakad, Dt Jalgaon. Microliths (of unspecified nature).

IAI 1962-3.

Vakharia, Dt Surat. Early, Middle (Lower, Middle Palaeolithic [4.2, 3]) and Late Stone Age (Mesolithic [4.5]) site.

IAI 1967-8.

Valaiyanpatti, Dt Pudukkottai. A large red and thick-walled urn containing loose earth and a few bone fragments was unearthed.

ASI—AR 1936-7. *Manual of Pudukkottai State*, 1944, 1, 1, pp. 515-8.

Valavanad hill, Dt Tirunelveli. Megalithic [4.17.9] site yielding a large number of urn burials.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Valivallampathy, Dt Palghat. Megalithic [4.17.10] site.

IAI 1969-70.

Valkandinni, Dt Raichur. Megalithic [4.17.8] stone circles.

Jour. Geological Survey of Hyderabad, 3, 1, pp. 76-82.

Vallabhi, Dt Kaira. Roman amphorae [11.19], conch-shell bangles, etc.

IAI 1963-4.

Vallabhipura, Dt Surendranagar. Harappa pottery [11.3] and Red Polished Ware [11.23].

IAR 1962-3.

Vallabhnagar, Dt Udaipur. Early Stone Age (Lower Palaeolithic [4.2]) tools in the Berach valley.

IAR 1962-3.

Vallam, Dt Thanjavur. Broken pieces of urns and a few sherds of the Megalithic Black-and-red Ware [11.15].

IAR 1964-5.

Vallam-Nattamedu, Dt Tiruchchirappalli. Megalithic Black-and-red Ware [11.15].

IAR 1962-3.

Vallanadu, Dt Tirunelveli. Megalithic [4.17.9] site.

ASI—AR 1902-3.

Vallara, Dt Banas-Kantha. Painted red ware (of unspecified affiliation).

IAR 1964-5.

Valli, Vanthlino Tekrao, Dt Kaira. Mesolithic [4.5] site.

IAR 1972-3.

Vallianoor-Amsom, Dt Cannanore. Megalithic rock-cut caves [4.17.10].

IAR 1961-2.

Valmiki Ashram, Dt Kanpur. NBPW [11.16] site.

IAR 1965-6.

Valod, Dt Surat. Mesolithic [4.5] site on the Valmiki or Jhankhari river.

IAR 1968-9.

Valotri, Dt Kaira. Harappa [4.9] site.

IAR 1972-3.

Valpura (Ishvariya) Dt Bhavnagar. Harappa [4.9] and early historical [4.18.2] site.

IAR 1971-2.

Vamalapadu. See SRISAILAM.

Vaman, Dt Agra. PGW [11.14] and NBPW [11.16] site.

IAR 1965-6.

Vamanapuram, Dt Trivandrum(?). Megalithic [4.17.10] site with port-holed cists.

AI, 4, 1947-8, p. 307.

Vambhari, Dt Jalgaon. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1965-6.

Vambori, Dt Ahmadnagar. Dull and red-slipped pottery of the early historical period [4.18.9].

IAR 1958-9.

Vanagiri, Dt Thanjavur. Brick-built channel with sluice-gate, a punch-marked coin [3.1] and Rouletted Ware [11.21] were found. See KAVERIPUMPATTNAM.

Malony, C., 1976, in Stein, B., ed., *Essays on s. India*, Delhi.

Vanakpur, Dt Bharuch. Early historical [4.18.2] site.

IAR 1968-9.

Vanapada, Dt Bijapur. Megalithic [4.17.8] site.

IAR 1962-3.

Vanaval, Dt Dhule. Late Stone Age (Mesolithic [4.5]) site.

IAR 1966-7.

Vandari, Dt Madurai. Urn burials [4.17.9].

IAR 1958-9.

Vandatur hill, Dt Chingleput. Megalithic [4.17.9] site.

AI, 22, 1966, p. 31.

Vandhegolla-Jigeri, Dt Dharwar. Early Acheulian [4.2] implements were found in the fields between Vandhegolla and Jigeri.*

IAR 1963-4.

Vanganum Kudi Kad, Dt Thanjavur. Lower Palaeolithic [4.2] site.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Vanghadhra, Dt Bhavnagar. Early historical [4.18.2] site.

IAR 1971-2.

Vanghikhurd, Dt Ahmadnagar. Tools of Series I and II (Lower and Middle Palaeolithic [4.2,3]).

IAR 1955-6.

Vanhalli, Dt Bijapur. Chalcolithic [4.14.8] site. See AJMEL.

IAR 1959-60.

Vaniavadar, Venivadar (29°39'; 71°09'), Dt Amreli. Late Harappa [4.10] settlement corresponding to RANGPUR II B and continuing into RANGPUR II C on the left bank of the Vadi, a tributary of the Shetrunji. The site was reoccupied in the early historical period [4.18.2] as is indicated by the presence of the Red Polished Ware [11.23].

AI, 18 & 19, 1962 & 1963, pp. 187, 207.

Vaniyamkulam, Dt Palghat. Megalithic [4.17.10] site with rock-cut cave.

IAR 1968-9.

Vanjalpur, Dt Ahmadnagar. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1959-60.

Vankhed, Dt Ratnagiri. Lower Palaeolithic [4.2] site.

Joshi, R.V., & Bopardikar, B.P., in *Arch. Congress & Seminar*, Nagpur, 1972.

Vankiner (21°50'; 69°25'), Dt Jamnagar. Late Harappa [4.10] site corresponding to RANGPUR II B and II C.

IAR 1957-8 (where it is said to be a Harappa [4.9] site). *AI, 20 & 21, 1962 & 1963, p. 207.*

Vankuta, Dt Dhule. Microliths (of unspecified nature).

IAR 1961-2.

Vantareddipalli, Dt Anantapur. Ash-mound [14.3].

IAR 1965-6.

Vanthlino Takrao. See VALLI.

Vantipor, Dt Anantnag. Ancient Avantipura founded by king Avantivarman (855-83). Excavation in 1910 and in 1913 brought to light remains of the Avantivāmin temple and a large number of coins, sculptures and potsherds.

ASI—AR 1913-4.

Vaodi, Dt Bharuch. Late Stone Age (Mesolithic [4.5]) site.

IAR 1969-70.

Varadapura, Dt Kolar. Megalithic [4.17.8] site with cairn circles.

IAR 1969-70. Also information from C. Krishnamurthy through A. Sundara.

Varahi, Dt Banas-Kantha. Painted red ware and

medieval glazed ware.

IAR 1964-5.

Varadarapally, Dt Trichur. Megalithic [4.17.10] site.

IAR 1966-7.

Varapalayam, Dt Coimbatore. Megalithic [4.17.9] cairn circles.

IAR 1962-3.

Vardi, Dt Dharwar. Early Stone Age (Lower Palaeolithic [4.2]) site.

IAR 1962-3.

Varhada, Dt Dhule. Late Stone Age (Mesolithic [4.5]) site.

IAR 1966-7.

Varikkal, Dt S. Arcot. Megalithic [4.17.9] site.

AI, 22, 1966, p. 32.

Varsus, Dt Dhule. Late Stone Age (Mesolithic [4.17.6]) tools.

IAR 1964-5.

Varud, Dt Amravati. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1962-3.

Varul, Dt Dhule. Microliths and sometimes neoliths were also found in association with black-on-red painted pottery. Alongside was also found a coarse grey ware similar to that from the Chalcolithic levels at BRAHMAGIRI and BAHAL. The site also contained the remains of burials, with which were associated pots of the Black-and-red Ware [11.15] bearing graffiti [20.1]. See DHAMDAI.

IAR 1957-8.

Varvad, Dt Dhule. Middle (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) tools.

IAR 1961-2.

Vasaha, Dt Allahabad. Painted rock-shelter [13] in Jharena-ki-Pahari.

IAR 1963-4.

Vasai¹ (Wasai) Dt Jamnagar. Pottery corresponding to RANGPUR II C, Red Polished Ware [11.23] and a variant of Rang Mahal Ware [11.24].

Subbarao, B., 1958, *The Personality of India*, Baroda, pp. 47, etc. IAR 1960-1, AI, 18 & 19, 1962 & 1963, p. 207.

Vasai², Dt Mandsaur. Middle Stone Age tools were found on the river Chambal near Vasai.

IAR 1965-6.

Vasavappapuram, Dt Tirunelveli. Megalithic [4.17.9] site.

ASI-AR 1902-3.

Vasavasamudram, Dt Chingleput. The site at the mouth of the river Palar revealed only one Pd of occupation. Two ring-wells [14.15] located close to each other were exposed. The pottery included the Rouletted Ware [11.21] and amphorae [11.19]. The site seems to have remained under occupation only for a short period (c. 2nd century).

IAR 1970-1.

Vaskannalli, Dt Bijapur. Coarse red-slipped ware,

Russet-coated Painted Ware [11.22] and Red Polished Ware [11.23].

IAR 1958-9.

Vaskhedi, Dt Dhule. Artefacts ascribable to the post-Middle Stone Age (Middle Palaeolithic [4.3]) and pre-Late Stone Age (Mesolithic [4.5]).

IAR 1964-5.

Vaslai, Dt Dhule. Palaeolithic tools (of unspecified nature).

IAR 1959-60.

Vasmar, Dt Dhule. Middle Stone Age (Middle Palaeolithic [4.3]) tools.

IAR 1964-5.

Vassalur, Dt Salem. Megalithic [4.17.9] site with a number of elaborately formed dolmens and sepulchral circles.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Vastana, Dt Kaira. Mesolithic [4.5] site.

IAR 1972-3.

Vasudevanallur, Dt Tirunelveli. Prehistoric site (of unspecified nature).

ASI-AR 1936-7, Cammiade, L. A., *Gazetteer of Dt Tirunelveli*, p. 409.

Vatnal, Dt Belgaum. Middle Palaeolithic [4.3] site.

IAR 1972-3. Also information from B. Nurusimaiah.

Vattakulam, Dt Palghat. A rectangular rock-out cave [4.17.10] measuring 2×1.45 m was found. On the e. side a 25 cm high bench was seen running to a length of 90 cm. Broken pieces of pottery, a Russet-coated Painted Ware [11.22] bowl and iron objects were obtained from the cave.

IAR 1970-1.

Vattampatti, Vittampatti, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 1, 1, pp. 515-8.

Vattanakarichi, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 2, 1, pp. 933-4.

Vatul (73°36'; 16°44'), Dt Ratnagiri. A Lower Palaeolithic [4.2] discoid of quartzite was found.

IAR 1969-70, Joshi, R. V., & Bopardikar, B. P., in *Arch. Congress & Seminar*, Nagpur, 1972, p. 50.

Vaurad, Dt Ahmadnagar. Early historical [4.18.9] site.

IAR 1960-1.

Vayalpad, Dt Chittoor. Megalithic [4.17.7] port-holed cists.

AI, 4, 1947-8, p. 306.

Vedakattamadugu, Dt Dharmapuri. Megalithic [4.17.9] site with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Veda-pada, Dt Dhule. Microliths (of unspecified nature).

IAR 1959-60.

Vedarampatti, Dt Dharmapuri. Late Stone Age (Mesolithic [4.5]) site, also with Megalithic [4.17.9]

cairn circles.

IAR 1970-1.

Vedarattakkal, Dt Dharmapuri. Megalithic [4.17.9] and early historical [4.18.12] site.

IAR 1966-7.

Vedar Pulangulam, Dt Madurai. Urn burial [4.17.9].

IAR 1957-8.

Veddaradoddi, Dt Mysore. Megalithic [4.17.8] cist burials.

IAR 1961-2.

Vedullacheruvu, Dt Chittoor. Tools of the Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3]) were found in the loose gravels as well as in well-defined river sections and those of the Late Stone Age (Mesolithic [4.5]) at the top of the river terraces along the river Rallakalava.

IAR 1963-4; 1964-5.

Veerajendrapet, Dt Coorg. Megalithic [4.17.8] site with port-holed chambers.

Proc. Asiatic Soc. Bengal, 1868, pp. 151-5.

Veerampalli. See KANDLER VALLEY.

Veeranapura, Dt Mysore. Black-and-red [11.15] and Russet-coated Painted [11.22] Wares.

IAR 1961-2.

Veerla-Bodu, Dt Nalgonda. Rich Palaeolithic [4.2] site within the area of the Nagarjunasagar dam on the Krishna. See NAGARJUNAKONDA.

IAR 1960-1. Banerjee, K.D., & Joshi, R.V., 1975, in Subrahmanyam, R., ed., *Nagarjunakonda, 1954-60*, pp. 19, etc.

Vegadi, Dt Rajkot. Harappa [4.9] site. See DUMIANA.

IAR 1958-9.

Vehergaon, Dt Dhule. Chalcolithic [4.14.6] habitation site.

IAR 1964-5.

Vejalpur, Dt Bharuch. Microlithic tools of the Chalcolithic [4.14] context were discovered from Vejalpur on the Narmada, 7 km towards the sea from Bharuch. Early historical [4.18.2] material was also found.

IAR 1957-8; 1967-8.

Veka, Dt Dhule. Microliths and sometimes neoliths were found in association with the black-on-red painted pottery together with a coarse grey ware similar to that from the Chalcolithic [4.14.8] levels at BRAHMAGIRI and BAHAL. The site also contained remains of burials together with pots of Black-and-red Ware [11.15] bearing graffiti [20.1].

IAR 1957-8.

Velambur, Dt Madurai. Site with urn burials [4.17.9] and later habitation.

IAR 1958-9.

Velanpalaiyam, Dt Coimbatore. Megalithic [4.17.9] site with dolmens.

Sewell, R., 1882, *Antiquities Remains in the Presidency of Madras*, Madras.

Velaturu, Dt Mahbubnagar. Neolithic [4.6.8] site.

IAR 1966-7.

Veldurti, Dt Kurnool. Neolithic [4.6.8] flakes and cores.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Vellaimedu, Dt Coimbatore. Russet-coated Painted Ware [11.22].

IAR 1957-8.

Vellaiyan-Iruppu, Dt Thanjavur. Structures of the 9th-12th centuries were found. See KÄVERIPÜMPATTINAM, Malony, C., 1976, in Stein, B., *Essays on s. India*, Delhi.

Vellakovil, Dt Coimbatore. Megalithic [4.17.9] site with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Vellalankulam, Dt Madurai. Neolithic [4.6.10] ring-stone and mace-head.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Vellamadai, Dt Coimbatore. Megalithic [4.17.9] cairn circles.

IAR 1957-8.

Vellanur, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 1, 1, pp. 515-8.

Vellattanur, Dt Trichur. Megalithic [4.17.10] site with umbrella-stones.

IAR 1967-8.

Vellattukotai, Dt Chingleput. Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3]) tools.

IAR 1963-4.

Vellimazhi, Dt Palghat. Megalithic [4.17.10] site with rock-cut cave.

IAR 1968-9.

Velliyarasai, Dt Coimbatore. Megalithic [4.17.9] site with dolmens.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Vellur, Dt Tirunelveli. Megalithic [4.17.9] site.

ASI—AR 1902-3.

Velpumadugu, Dt Anantapur. Neolithic [4.6.8] site. See AKKAMMAKONDA.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Vembakhandiga, Dt Chittoor. A cave and two rock-shelters with Early Stone Age (Lower Palaeolithic [4.2]) tools in the vicinity were found.

IAR 1963-4.

Vembakkam, Dt Chingleput. Megalithic [4.17.9] site with stone circles.

Sewell, R., *Antiquarian Remains in the Presidency of Madras*, Madras.

Vemula, Dt Cuddapah. Neolithic [4.6.8] cores, strike-a-light, flakes of chert and celt were found.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Vemulapadu, Dt Kurnool. Microlithic flakes, fluted cores, black-painted red ware and Megalithic Black-and-red [11.15] and Russet-coated Painted [11.22] Wares.

IAR 1963-4.

- Vemulavada**, Dt Karimnagar(?) Middle Palaeolithic [4.3] site.
Gururaja Rao, B.K., ed., 1978, *Decade of Arch. Studies in s. India*, Dharwar, p. 48.
- Venegaon**, Dt Satara. Middle (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) tools.
IAR 1962-3.
- Vengasandra**, Dt Kolar. Megalithic [4.17.8] stone circles.
IAR 1970-1.
- Venghdra**, Dt Bhavnagar. Early Stone Age (Lower Palaeolithic [4.2]) site.
IAR 1970-1.
- Venkamanayanipalli**, Dt Chittoor. Upper Palaeolithic [4.4] and Mesolithic [4.5] site.
Sankalia, H.D., 1974, *Prehistory & Protohistory of India & Pakistan*, Poona.
- Venkatagiri**, Dt Nellore. Lower [4.2] and Middle Palaeolithic [4.3] site in the Venkatagireru valley.
IAR 1965-6.
- Venkatapura**, Dt Raichur. Megalithic [4.17.8] site with some megaliths in pairs.
AR Hyderabad Arch. Dept, 1936-7, p. 8.
- VenkataraoPET**, Dt Medak. Megalithic [4.17.7] stone circles and sherds of Black-and-red Ware [11.15.3].
IAR 1961-2.
- Venkatasamudram**, Dt Dharmapuri. Neolithic [4.6.10] site. Also Megalithic [4.17.9] cairn circles.
IAR 1970-1.
- Venkitagu**, Dt Trichur. Megalithic [4.17.10] site with menhir.
IAR 1967-8.
- Venupuri**, Dt Pune. Late Stone Age (Mesolithic [4.5]) site.
IAR 1969-70.
- Verareddipalli**, Dt Medak. Megalithic [4.17.7] stone circles.
IAR 1961-2.
- Veravel**, Dt Valsad. Early Stone Age (Lower Palaeolithic [4.2]) site.
IAR 1964-5.
- Vervandi**, Dt Ahmadnagar. Microliths (of unspecified nature).
IAR 1958-9.
- Vettayankinar**, Dt Coimbatore. Megalithic [4.17.9] cairn circles.
IAR 1961-2.
- Veugasandra**, Dt Kolar. Megalithic [4.17.8] site with stone circles.
Information from C. Krishnamurthy through A. Sundara.
- Vibhutihalli**, Dt Gulbarga. Megalithic [4.17.8] habitation site with stone alignments and circles.
Megalithic Tombs & Other Remains in the Deccan, Hyderabad, 1941.
- Vidapanakal**, **Vidupanakallu**, Dt Anantapur. Neolithic [4.6.8] site yielding celts, chisels, flakes, cores, etc.
Foote, R.B., *Indian Prehistoric & Protohistoric Antiquities*, Madras.
IAR 1965-6.
- Vidyapur**, Dt Agra. PGW [11.14] site.
IAR 1964-5.
- Vijai Garh**, Dt Aligarh. Crude PGW [11.14], Black-slipped Ware [11.13] and medieval ware.
IAR 1966-7.
- Vijalpur-I**, Dt Vadodara. Early historical [4.18.2] site.
IAR 1966-7.
- Vikhran**, Dt Dhule. Microliths (of unspecified nature).
IAR 1960-1.
- Vikramasila**. See ANTICHAK.
- Vikrampur**, Dt Ghazipur. Three ring-wells [14.15] and sherds of the Black-slipped Ware [11.13] and associated red wares were found.
IAR 1965-6.
- Vikrampur-Sikadi** Dt Ghazipur. Historical site (of unspecified nature).
IAR 1962-3.
- Vilakethi**, Dt Coimbatore. Megalithic [4.17.9] cists and Russet-coated Painted Ware [11.22].
IAR 1960-1.
- Vilangadu**, Dt Chingleput. Megalithic [4.17.9] urn burial. See OLD VILANGADU.
IAR 1957-8.
- Vilappatti**, Dt Pudukkottai. Megalithic [4.17.9] site.
Manual of Pudukkottai State, 1944, 1, 1, pp. 515-8.
- Vilayat Kalan**, **Vilayat-Khurd**, Dt Jabalpur. Middle Palaeolithic [4.3] site.
IAR 1968-9.
- VilliyanaI**, Dt Tiruchchirappalli. Megalithic Black-and-red Ware [11.15.3].
IAR 1963-4.
- Vilvattam**, Dt Trichur. Megalithic [4.17.10] site.
IAR 1966-7.
- Vinhuthija**, Dt Gulbarga. Megalithic [4.17.8] habitation site.
IAR 1963-4.
- Vipparla**, Dt Guntur. Megalithic Black-and-red Ware [11.15] and burnished grey ware.
IAR 1962-3.
- Viraboyinukunta**. See YELLESWARAM.
- Virachinnammalpuram**, Dt Madurai. Megalithic [4.17.9] cairn circles.
IAR 1960-1.
- Virakallu**, Dt N. Arcot. Megalithic [4.17.9] site with dolmens.
Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.
- Virakaputra**, Dt Kolar. Megalithic [4.17.8] site with stone circles and port-holed cists.
Information from C. Krishnamurthy through A. Sundara. IAR 1972-3.
- Viralipatti**, Dt Madurai. Megalithic [4.17.9] site with dolmens.
Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Viramalai, Dt Dharmapuri. Megalithic [4.17.9] cist burials.

IAI 1966-7.

Viramethimpu, Dt Thanjavur. Megalithic [4.17.9] site.

IAI 1961-2.

Virampalli, Dt Chanda. Early Stone Age (Lower Palaeolithic [4.2]) tools.

IAI 1961-2.

Virapandi, Dt Coimbatore. Megalithic [4.17.9] cairn circles.

IAI 1957-8.

Virapandiyapattinam, Dt Tirunelveli. Megalithic [4.17.9] site.

ASI-AR 1902-3.

Virapur, Dt Dharwar. Mesolithic [4.5] site with tools on quartz and occasionally on chalcedony and crystal. The dominant tool type is the point. The other types are burins, crescents, awls, etc.

Information from B. Narasimhayya.

Virapuram, Dt Prakasam. Early historical [4.18.10] site. See SRISAIAM.

IAI 1971-2.

Virarajendrapet, Dt Coorg. Port-holed cists [4.17.8].

Proc. Asiatic Soc. Bengal, 1868.

Virasikhamani, Dt Tirunelveli. Prehistoric site (of unspecified nature).

ASI-AR 1936-7. Cammiade, L. A., *Gazetteer of Tinnevely Dt*, p. 409.

Viravai, Dt Bharatpur. PGW [11.16] and Kushan red ware.

IAI 1971-2.

Virbhadrā (30°4'; 78°17'), Dt Hardwar, situated on the confluence of the Rambha, a rivulet, and the river Ganga, about 5 km downstream from Rishikesh. According to a version of the *Skanda-purāṇa* Māyāpuri, the chief city of Māyāpura-kṣetra, was on the confluence of the Rambha and Ganga; Virbhadrā may therefore be identified with Māyāpuri. The site was explored in 1963-4 by M.N. Deshpande (IAI 1963-4, p. 45). Renewed excavation in 1973-4 and 1974-5 carried out by the writer on behalf of the ASI has revealed deposits of 3-80 m without a break, which is divisible into early, middle and late phases. No brick fortification suspected earlier has however been found.

From the early phase, c. 1st to 3rd centuries, Red Polished Ware [11.23] sprinklers, bowls, black-painted red sherds, handmade vases with pinched base and a copper Kushan coin have been recovered. The middle phase, c. 4th to 6th centuries, has yielded kaolin sherds, cooking vessels, with indentations and lug ears on their rims, sherds bearing motifs in relief in imitation of jack fruit and ornamental bricks. Identical objects were recovered from excavations at AHICCHATRĀ and KASHIPUR from the Gupta and post-Gupta levels. To this phase belongs a Śaivite sanctum with a *liṅga* and

three brick-built rectangular shrines each having a square *garbhagrha* and front *mandapa*. From this phase onwards animal bones are absent in contrast to the early phase. Probably vegetarianism was introduced in this region at this time. In the last phase, c. 7th and 8th centuries, the pottery types are a continuation from the middle phase. A temple of brick, 33 × 24 × 7 and 25 × 13 × 6 cm, and residential building having six interconnected rooms with paved floor and a corridor have been laid bare.

Ghosh, N.C., & Sharma, R.P., 1975-6, in *Purātattva*, 8, pp. 180-1.—N.C. GHOSH

Virehak, Dt Dhule. Palaeolithic (of unspecified nature).

IAI 1959-60.

Virnagar, Dt Rajkot. A low-lying mound known as Hanumanji-no-timbo near Virnagar yielded the Red Polished Ware [11.23].

IAI 1958-9.

Viroli, Dt Chittaurgarh. Microliths, black-and-red ware [11.6.2] and associated pottery.

IAI 1956-7.

Virpur, Dt (22°07'; 70°06'), Dt Jamnagar. Lustrous Red Ware [1.9] site corresponding to RANGPUR II C and III.

AI, 18 & 19, 1962 & 1963, p. 207.

Virudapatti, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 1, 1, pp. 515-8.

Visadi, Dt Ahmadabad (?). An Upper Palaeolithic [4.4] industry was found near Bodeli within a dune to the lee of the hills. This is a blade-and-burin industry made entirely in quartz and is distinct both in scale and technique, from the microlithic industries of the region.

IAI 1970-1.

Visvanathapuram, Dt Pudukkottai. Megalithic [4.17.9] site.

Manual of Pudukkottai State, 1944, 2, 1, p. 934.

Vite, Dt Ahmadnagar. Tools of Series I (Lower Palaeolithic [4.2]).

IAI 1959-60.

Vithalapuram, Dt Tirunelveli. Megalithic [4.17.9] site.

ASI-AR 1902-3.

Vitlampalli, Dt Anantapur. Neolithic [4.6.8] habitation site. See AKKAMMAKONDA.

IAI 1965-6.

Vitragal, Dt Gulbarga. Megalithic [4.17.8] site.

Jour. Geological Survey of Hyderabad, 4, 1, p. 157.

Vittampatti. See VATTAMPATTI.

Vobbihalli, **Vobhahalli**, Dt Kolar. Megalithic [4.17.8] site with stone circles.

IAI 1970-1. Also information from C. Krishnamurthy through A. Sundara.

Vontimitta, Dt Gulbarga. Megalithic [4.17.7] port-holed cists.

AR-ASI s. Circle, 1912-3.

Vora-Kotra, Dt Rajkot. Harappa [11.3] Ware.

IAI 1957-8.

Vyad, Dt Nagpur. Black-painted red ware of Chalcolithic [4.14.6] assemblage and black-and-red and thick micaceous wares. Also Megalithic [4.17.6] cairn circles.

IAR 1961-2; 1968-9.

Vyara, Dt Surat. Mesolithic [4.5] site on the Mindhola.

IAR 1968-9.

Vyatagiripalem, Dt Nellore. Lower Palaeolithic [4.2] site.

IAR 1965-6.

Vyaval, Dt Dhule. Palaeolithic tools (of unspecified nature) and Chalcolithic [4.14.6] remains. Sherds of the Red Polished Ware [11.23] were also picked up.

IAR 1958-9.

Vykkilassery Desam, Dt Kozhikode. Megalithic [4.17.10] site with rock-cut caves.

IAR 1969-70.

W

Wadageri, Dt Gulbarga. Chalcolithic [4.14.8] and Megalithic [4.17.8] site with stone circles.

Jour. Geological Survey of Hyderabad, 5, 1, p. 56. Paddayya, K., 1973, *Investigation into the Neolithic Culture of Shorapur Doab*, s. India, Leiden, p. 11.

Wadegaon, Dt Chanda. The site on the Satti Nullah yielded (Mesolithic? [4.5]) cores, lunates, points and blades.

IAR 1968-9.

Wadli, Dt Dhule. Microliths (of unspecified nature).

IAR 1958-9.

Wagheda, Dt Chanda. Lower Palaeolithic [4.2] site.

IAR 1959-60.

Wai¹, Dt Satara. Small mound yielding antiquities assignable to the Sātavāhana period.

IAR 1968-9.

Wai², Dt Surat. Early, Middle (Lower, Middle Palaeolithic [4.2, 3]) and Late Stone Age (Mesolithic [4.5]) site.

IAR 1967-8.

Wajal. See DON RIVER.

Wakoli, Dt Kolaba. Early Stone Age (Lower Palaeolithic [4.2]) site on the Savitri river yielding unifacial choppers.

IAR 1970-1.

Walajabad, Dt Chingleput. Lower Palaeolithic [4.2] site.

Footo, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Walgaon, Dt Amravati. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1960-1; 1965-6.

Walki, Dt Pune. Chalcolithic [4.14.6] site near the confluence of the Bhima and Mula. To judge by the pottery the site was first occupied by the bearers of the Malwa culture [4.14.5] who were followed by the people using the Jorwe Ware [11.11].

IAR 1969-70.

Walwa, Dt Sangli. Tools of the Middle (Middle Palaeolithic [4.3]) and Late Stone (Mesolithic [4.5]) Age.

IAR 1962-3.

Walwane, Dt Ahmadnagar. Tools of Series II (Middle Palaeolithic [4.3]) and microliths (of unspecified nature) and sherds of thick grey ware were collected. Early historical pottery was characterized by black-and-red and red wares.

IAR 1960-1.

Wanadongri, Dt Nagpur. Megalithic [4.17.6] site.

IAR 1961-2.

Wandalli, Dt Raichur. Chalcolithic [4.14.8] site and an ash-mound [14.3].

Footo, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras. *Jour. Geological Survey of Hyderabad*, 2, 1, *AR Hyderabad Arch. Dept.*, 1927-8, Appendix C. Allchin, F.R., 1963, *Neolithic Cattle-Keepers of s. India*, Cambridge, pp. 61-2.

Wangepalli, Dt Chanda. Early Stone Age (Lower Palaeolithic [4.2]) tools and microliths (of unspecified nature).

IAR 1961-2.

Wani, Dt Hissar. Plain grey ware site.

Haryana Studies in History & Culture, p. 136.

Waranga, Dt Nanded. Middle Stone Age (Middle Palaeolithic [4.3]) and Late Stone Age (Mesolithic [4.5]) site.

IAR 1964-5; 1970-1.

Wardha, Dt Chanda. Late Stone Age (Mesolithic [4.5]) site.

IAR 1969-70.

Wardhamna, Dt Nagpur. Tools of Series II (Middle Palaeolithic [4.3]) were found near Wardhamna on the Nagpur-Amravati road.

IAR 1959-60.

Wargund, Dt Dharwar. Lower Palaeolithic [4.2] site also yielding Neolithic [4.6.9] implements.

IAR 1967-8.

Warkekasa, Dt Chandrapur. Mesolithic [4.5] site.

IAR 1961-2.

Warkhed, Dt Ahmadnagar. Tools of Series I and II (Lower and Middle Palaeolithic [4.2, 3]) were found together with a number of fossilized animal bones.

IAR 1955-6.

Warsa, Dt Dhule. Late Stone Age (Mesolithic [4.5]) site.

IAR 1965-6.

Warthan, Dt Surat. A twofold sequence was revealed. The earlier one was represented by the occurrence of a black-painted red ware. The upper one, which followed after a break, was marked by the occurrence of plain black-and-red ware similar to that found at NAGAL. The site continued in occupation till the beginning of the Christian era.

IAR 1961-2.

Warudsawala, Dt Nanded. Late Stone Age (Mesolithic [4.5]) site.

IAR 1970-1.

Waruna, Dt Panch Mahals. Late historical [4.19.2] site.

IAR 1971-2.

Wasai. See VASAI.

Watgal, Dt Raichur. Chalcolithic [4.14.8], Megalithic [4.17.8] and early historical [4.17.11] site.

Footo, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras. *Jour. Karnataka Univ.*, 4, p. 19.

Wavrat, Dt Ahmadnagar. Early historical [4.18.2] site. IAR 1960-1.

Wazidpur-ka-Kot, Dt Ghazipur. NBPW [11.16] site. IAR 1963-4.

Wazirabad, Dt Nalgonda. Lower and Middle Palaeolithic [4.2, 3] and Mesolithic [4.5] site.

Sankalia, H.D., 1974, *Prehistory & Protohistory of India*, Poona, p. 61.

Wazir Bhullar, Dt Amritsar. A few sherds of doubtfully Harappa [11.3] fabric, besides grey ware and Sunga-Kushan pottery.

IAR 1964-5.

Waztal, Dt Srinagar (?) Megalithic [4.17.1] site with

menhirs as at BURZAHOM and gritty red ware.

IAR 1969-70.

Wirsi, Dt Chanda. Late Stone Age (Mesolithic [4.5]) site.

IAR 1967-8.

Woodecottah, Dt Chingleput. Palaeoliths (of unspecified nature).

Footo, R.B., *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Wowala, Dt Chanda. Microliths (of unspecified nature). IAR 1960-1.

Wurpur, Dt Gurdaspur. Early historical [4.18.1] remains. See ACHAL-SAHEB.

IAR 1961-2.

Wusan. See SIND VALLEY.

Wynad Forest, Dt Kozhikode. Megalithic [4.17.10] sites, many of them associated with urn burials.

Cammiade, L.A., 1930, in *Man*, 30, article 135.

Y

Yabbalu, Dt Raichur. Neolithic-Chalcolithic [4.6.9, 4.17.8] site.

IAR 1962-3.

Yabratti, Dt Belgaum. Chalcolithic [4.14.8] site.

P.B. Desai Felicitation Vol., Dharwar, 1971, pp. 4-30.

Yaddihalli, Dt Gulbarga. Lower Palaeolithic [4.2] site. An ovate on limestone is noteworthy.

Foot, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Yadegudda, Dt Shimoga. Neolithic [4.6.9] site.

Information from A. Sundara.

Yadgir, Dt Gulbarga. Lower and Middle Palaeolithic [4.2, 3] sites.

Information from B.K. Gururaja Rao through A. Sundara.

Yadwad (16°15'; 75°13'), Dt Dharwar. Middle Palaeolithic [4.3] site, also with fine polished stone axes [4.6.9]. See GHATAPRABHA VALLEY.

IAR 1966-7.

Yaganti, Dt Kurnool. See BILLA SURGAM.

Yaksha, Dt Kutch. Middle Palaeolithic [4.3] site.

IAR 1967-8.

Yalesandra, Dt Kolar. Megalithic [4.17.8] site with stones circles with cists.

Information from C. Krishnamurthy through A. Sundara.

Yalgod, Dt Bijapur. Coarse red-slipped ware and Russet-coated Painted [11.22] and Red Polished [11.23] Wares.

IAR 1958-9.

Yamuna river, a possible old course of the upper, Dts Hissar, Jind and Karnal. The course can be traced from near Indri in the n.-e. up to Tosham in the s.-w., a distance of 180 km. As many as 18 sites have been traced along this course: Karsola, Baghru, Mitathal, Chang, Singhva, Seman, Farmana-1 and -2, Paoli, Urlana, Kalan, Safidom, Gagsina, Jhanjhari, Ramba-1 and -2 and Kheri Mansingh. Of these Seman and Safidom are PGW [11.14] sites and the rest are variously pre-Harappa [4.8], Harappa [4.9] and late Harappa [4.10].

Suraj Bhan, 1976, in *Arch. Congress & Seminar, 1972*, Kurukshetra.

Yaragamaballi, Dt Mysore. Microliths (of unspecified nature).

IAR 1960-1.

Yariyur, Dt Mysore. Megalithic [4.17.8] habitation site.

Information from C. Krishnamurthy through A. Sundara.

Yarnal, Dt Belgaum. Megalithic [4.17.8] site.

IAR 1966-7.

Yarul, Dt Bijapur. Coarse red-slipped ware and Russet-coated Painted [11.22] and Red Polished [11.23] Wares.

IAR 1958-9.

Yasavaram, Dt Nellore. Lower [4.2] and Middle Palaeolithic [4.3] site in the Venkatagieru valley.

IAR 1965-6.

Yashwantnagar, Dt Indore. Lower Palaeolithic [4.2] site.

IAR 1970-1.

Yatakal, Dt Anantapur. Neolithic [4.6.8] habitation site. See AKKAMMAKONDA.

IAR 1965-6.

Yattinalli, Dt Dharwar. Early historical [4.18.11] site. See HANDIGNUR.

IAR 1958-9.

Yattur, Dt Kolar. Megalithic [4.17.8] stone circles.

IAR 1972-3.

Yavagal, Dt Dharwar. Grey ware of BRAHMAGIRI fabric.

IAR 1966-7.

Yebrati, Dt Belgaum. Neolithic [4.6.9]-Chalcolithic [4.17.8] site.

IAR 1965-6.

Yechangalli, Dt Mysore. Neolithic [4.6.9] site yielding ground stone axes and brown burnished handmade pottery.

IAR 1963-4.

Yeddalabhavi, Dt Gulbarga. Megalithic [4.17.8] site.

Jour. Geological Survey of Hyderabad, 4, 1, p. 157.

Yedhalli, Dt Bijapur. Lower and Middle Palaeolithic [4.2, 3] site.

IAR 1963-4. Pappu, R.S., 1974, Pleistocene Studies in the Upper Krishna Basin, Pune, p. 53.

Yedlapadu, Dt Guntur. Megaliths [4.17.7].

IAR 1960-1.

Yeguvacherlopalli, Dt Kurnool. Site with tools of Series I and II (Lower and Middle Palaeolithic [4.2, 3]) and megaliths [4.17.7].

IAR 1959-60.

Yelachetti, Dt Mysore. Megalithic [4.17.8] cairn circles.

IAR 1962-3.

Yelger, Dt Bijapur. Lower Palaeolithic [4.2] site. (Same as following?)

Pappu, R.S., 1974, *Pleistocene Studies in the Upper Krishna Basin, Pune, p. 33.*

Yelger, Dt Bijapur (?). Early and Middle Stone Age (Lower and Middle Palaeolithic [4.2, 3] tools. (Same as preceding?)

IAR 1963-4.

Yellagiri, Dt Salem. Pointed-butt polished stone axes

[4.6.10].

ASI—AR 1930-4.

Yellammagudda, Dt Belgaum. Megalithic [4.17.8] site.

IAR 1968-9.

Yellari, Dt Parbhani. Series II (Middle Palaeolithic [4.3]) tools.

IAR 1960-1.

Yellatur, Dt Cuddapah. Neolithic site yielding a few flakes and slickstones together with pottery, mostly red-painted and polished. A noteworthy specimen was a small roughly made *lotā* filled with lime like what is frequently seen in the rejected *chatties* of toddy-drawers.

Foote, R.B., 1916, *Prehistoric & Protohistoric Antiquities*, Madras.

Yelleswaram, Yeleswaram, Elleswaram, Yellaisharam (16°28'; 79°13'), Dt Nalgonda, opposite Nagarjunakonda, originally a valley on the left bank of the Krishna but now completely submerged under the reservoir of the Nagarjuna Sagar Dam. The valley, about 13 sq km in area, was shut off on three sides by hills, while the n.-e. side was bounded by the river Krishna, flowing practically in a s.-n. direction (*uttara-vāhini*).

Though not as rich in archaeological remains as the NAGARJUNAKONDA valley, Yelleswaram had at least five well-defined sites, the earliest of them a Palaeolithic [4.2] one, near the confluence of the Peddavagunullah with the Krishna near Rayavaram. Three other sites—Kistapuram at the foot of the Mallagutta hill, the most conspicuous hill-feature on the bank of the Krishna, Lohamancheru and Viraboyinukunta, both located close to each other in the interior of the valley—yielded Megalithic [4.17.7] remains. These sites were excavated by P. Sreenivasachar though no reports are available. But most important was the temple site where excavations were carried out for several seasons by the Dept of Arch. Andhra Pradesh (IAR 1957-8, p. 9; 1958-9, p. 11; 1959-60, p. 12).

The Kistapuram group of megaliths consisted of seven stone circles, ranging in diameter from 5.49 m to 12.14 m. According to the local reports, three of these megaliths, which were opened, revealed huge urns. Lohamancheru and Viraboyinukunta each produced a cluster of dolmenoid cists, most of them without any stone circles. Of the 20 examples at Lohamancheru, five were excavated—one of them yielding a partitioned cist with port-hole. There were 23 megaliths at Viraboyinukunta, of which four were opened. In all the dolmenoid cists, with orthostats projecting on the surface, post excarnation burial was the rule: more often than not bones and skulls had been placed in heaps along with pottery and iron objects. Examination of skeletal remains from Viraboyinukunta showed that the male population was wholly brachycranial while the females had dolichomesocranic head-forms. They were robust people and belonged to above-medium and tall groups

(Gupta and Datta, 1962; Sarkar, 1972).

Excavation at the temple-site revealed at the lowest level four different types of megaliths: dolmenoid cist with a partition; a cist within cist with port-holes; an urn burial with post-exposure burial; and pit circles, one of them disclosing a joint extended inhumation burial. The individual buried in the urn was mesocranial (79-17) whereas the dolmenoid cist produced an adult male, an adult female and a child about three years old. While the female was brachycranial (82-08), the adult male was a tall person having a long head (72-58). In the joint burial one was a female with mesocranial index (76-16) and the other a tall long-headed (72-73) male. These megaliths have to be dated much earlier than the 3rd century A.D. when the site was selected for the erection of a temple-complex.

The excavator has divided the occupational deposits of the temple-site into six Pds, the earliest of them being the Megalithic. In all likelihood the structural activities here began with the Ikṣvāku supremacy during the first quarter of the 3rd century A.D. There is hardly any justification for ascribing the stepped bathing ghat [14.10] and the pillared hall near by to pre-Ikṣvāku times (Pd II of the excavator) specially because all the inscriptions on the ghat slab were in Telugu characters. Nor is there any ground for identifying the apsidal shrine and the base of a circular structure as part of a monastic establishment. There were a number of Brāhmanical temples built on apsidal plan as at NAGARJUNAKONDA, and further the river bank here was dotted with such temples because of the n. turn of the river, which was considered sacred. No Buddhist monastery came up on the river bank at NAGARJUNAKONDA. All these are true also for the Yelleswaram structural complex which sprang up as Brāhmanical establishment, a fact wholly supported by the later history of the site.

Located very close to the Yelleswaram ferry ghat which could be approached only from the NAGARJUNAKONDA side by crossing the river it was in the main a pilgrim-centre. There were a number of late Cālukyan temples built in stone, and the most important of them was the Yelleśvarasvāmin temple or, as the inscriptions say, the temple of Yeleśvaradeva. Many pillars here bore records in early Cālukyan characters of the 8th and 9th centuries. One of the inscriptions, in florid Nārari characters of the 10th century, referred to one Uggavala of Varendra-visaya (n. Bengal). Donative records may be dated variously from the 4th to the 13th centuries and barring two or three early inscriptions most of them were in Telugu inscriptions registering some gift or the other to the god Yeleśvaradeva.

Gupta, P., & Datta, P.C., 1962, in *Man in India*, 42. Khan, M.A.W., 1963, *Monograph on Yeleswaram Excavations*, Hyderabad. Sarkar, H., 1969, in Narain, A.K., & Singh, P., ed., *Seminar Papers on the Problem of Megaliths in India*, Varanasi. Sarkar, S.S., 1972,

Ancient Races of the Deccan, Delhi.—H. SARKAR

Yemmi Gude, Dt Raichur. Megalithic [4.17.8] port-holed cists.

AI, 4, 1947-8, p. 308.

Yenkura, Dt Bidar. Megalithic [4.17.8] and early historical [4.18.11] site.

Karnataka Bharati, 11, 3.

Yenugapalem, Dt Krishna. Site with dolmens [4.17.7].

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Yerangal, Dt Bombay Suburban. Middle Palaeolithic [4.3] and Mesolithic [4.5] site.

IAR 1961-1.

Yeresibetta, Dt Nilgiri. Megalithic [4.17.9] site.

Footte, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Yergunta, Dt Raichur. Ash-mound [14.3].

Jour. Geological Survey of Hyderabad, 2, p. 2. *AR Hyderabad Arch. Dept.* 1935-6, Appendix A. Allchin, F.R., 1963, *Neolithic Cattle-keepers of s. India*, Cambridge, p. 60.

Yerkanhal, Dt Gulbarga. Megalithic [4.17.8] site.

Paddayya, K., 1973, *Investigation into the Neolithic Culture of Shorapur Doab, s. India*, Leiden, p. 7.

Yerraballa, Dt Cuddapah. Megalithic [4.17.7] site with dolmens.

Sewell, R. 1882, *Antiquarian Remains in the Presidency of Madras*, Madras.

Yerrakondapalem, Yerragondapalem, Dt Kurnool. Series I and II (Lower and Middle Palaeolithic [4.2.3]) tools, neoliths [4.6.8] and megalithic [4.17.7] on the Gundlakamma.

Sewell, R., 1882, *Antiquarian Remains in the Presidency of Madras*, Madras. *IAR* 1959-60.

Yerragudi hill, Dt Anantapur. Neolithic [4.6.8] site yielding celts and mealing-stones.

Footte, R.B., 1916, *Indian Prehistoric & Protohistoric Antiquities*, Madras.

Yerra Zari Gabbi caves, Dt Kurnool. See BILLA SURGAM.

Yesar, Dt Dhule. Early Stone Age (Lower Palaeolithic [4.2]) tools and Chalcolithic [4.17.6] habitation.

IAR 1961-2; 1969-70.

Yeseenpur, Dt Bulandshahr. PGW [11.14], grey ware, Black-slipped Ware [11.13] and red ware of Sunga-Kushan period.

IAR 1970-1.

Yevatti, Dt Dharwar. Early historical [4.18.11] site. See ADERKATTI.

IAR 1961-2.

Yigavaripalem (13°26'; 80°03'), Dt Chingleput. Middle Stone Age (Middle Palaeolithic [4.3]) site.

IAR 1967-8.

Z

Zanzpore, Dt Bharuch. Late Stone Age (Mesolithic [4.5]) site in the Zarankhadi valley.

IAR 1968-9.

Zaran, Dt Surat. Lower [4.2] and Middle Palaeolithic [4.3] and Mesolithic [4.5] site.

IAR 1967-8.

Zekada ($23^{\circ}40'$; $71^{\circ}20'$), Dt Banas-Kantha. Harappa [4.9] site. Surface exploration yielded red ware, painted black-on-red ware, coarse gritty ware, Lustrous Red Ware [11.19] and white-painted black-and-red ware.

Parikh, R.T., 1976, in *Arch. Congress & Seminar, 1972*, Kurukshetra.

Zafarabad, Dt Jaunpur. NBPW [11.16] site.

IAR 1962-3.

Zahura, Dt Hoshiarpur. Site yielding Black-slipped Ware [11.13], black-painted red and plain red wares and Red Polished Ware [11.23] of the early historical period and medieval glazed ware. There are ruins of a citadel with a bastion at each of its four corners and a moat with the main approach from the n. side, locally attributed to the Sikh period.

IAR 1969-70.

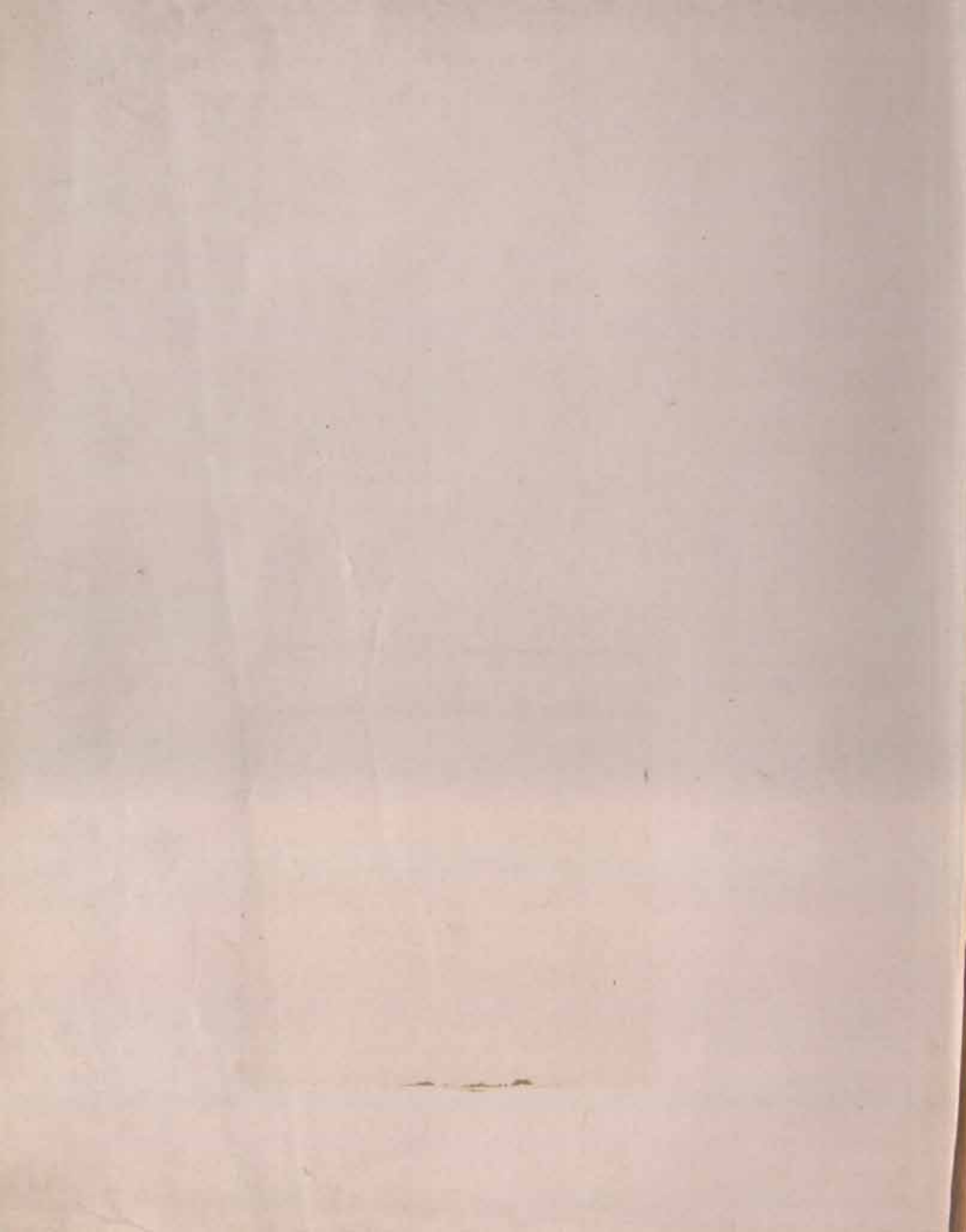
Zalod, Dt Panch Mahals. Black-and-red ware.

IAR 1965-6.



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